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UNITED STATES NAVAL OBSERVATORY

CIRCULAR NO. 125

U. S. Naval Observatory, Washington, D. C. 20390 March 7, 1969

Total Solar Eclipse of 7 March 1970

by

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GENERAL INFORMATION

The path of the total phase of the solar eclipse of 7 March 1970 touches the earth at sunrise in the Pacific Ocean two degrees south of the equator at longitude +148°. Traveling in a northeasterly direction, the path touches the southern coast of Mexico at $17^h\ 28^m$ U.T. Over the Isthmus of Tehuantepec the eclipse reaches maximum duration of $3^m\ 27\overset{s}{.}8$. The path leaves the northern coast of Mexico at $17^h\ 40^m$ U.T. and passes north of the Yucatan Peninsula across the Gulf of Mexico. The path touches the coast of Florida between Apalachicola and Cross City at $18^h\ 15^m$ U.T. and travels along the eastern coast of the United States from Georgia to the lower Chesapeake Bay. The path passes over Nantucket Island at $18^h\ 46^m$ U.T. and Monomoy Point, Massachusetts at $18^h\ 47^m$ U.T.

Continuing over the Atlantic Ocean, the path passes over the southeastern coast of Nova Scotia between $18^h\ 52^m$ U.T. and $18^h\ 58^m$ U.T. and Newfoundland between $19^h\ 00^m$ U.T. and $19^h\ 03^m$ U.T. The path leaves the earth at sunset in the North Atlantic Ocean, west of Ireland.

Partial phases of the eclipse of greater or less magnitude, decreasing with the distance from the path of the total phase, will be visible over most of North America, the northwest part of South America, most of Greenland and Iceland.

The predictions in this *Circular* are derived from the basic data in the American Ephemeris and Nautical Almanac for the Year 1970. The arguments are in Universal Time, and the longitudes west of Greenwich are positive. The position of the sun was referred to the equinox of FK4 by applying a correction of $1\overset{s}{.}34$. The value of ΔT, used in the computations, is 38.7 seconds.

The value of 0.2724880 for $\underline{k}$ has been used in these calculations except for the calculations of duration on the central lines, where the value 0.272281 has been used by way of applying an approximate correction for the irregularities of the lunar limb. The duration tabulated in local circumstances is derived from the second and third contacts.

In the local circumstances, the angle $\underline{P}$ is the position angle of the point of contact, measured eastward from the north point of the solar limb, and the angle $\underline{V}$ is the position angle of the point of contact, measured eastward from the vertical circle.

The circumstances of the eclipse are plotted by the Nautical Almanac Office on portions of the Air Navigation Charts Series V30, and the Operations Control Center Plotting/Display Charts 17,000 Series of the U. S. Naval Oceanographic Office.

GENERAL INFORMATION *(Continued)*

The climatological data were compiled by the Environmental Data Service, Environmental Science Services Administration of the U. S. Department of Commerce.

To convert to the standard time zone of the observer's geographic location:

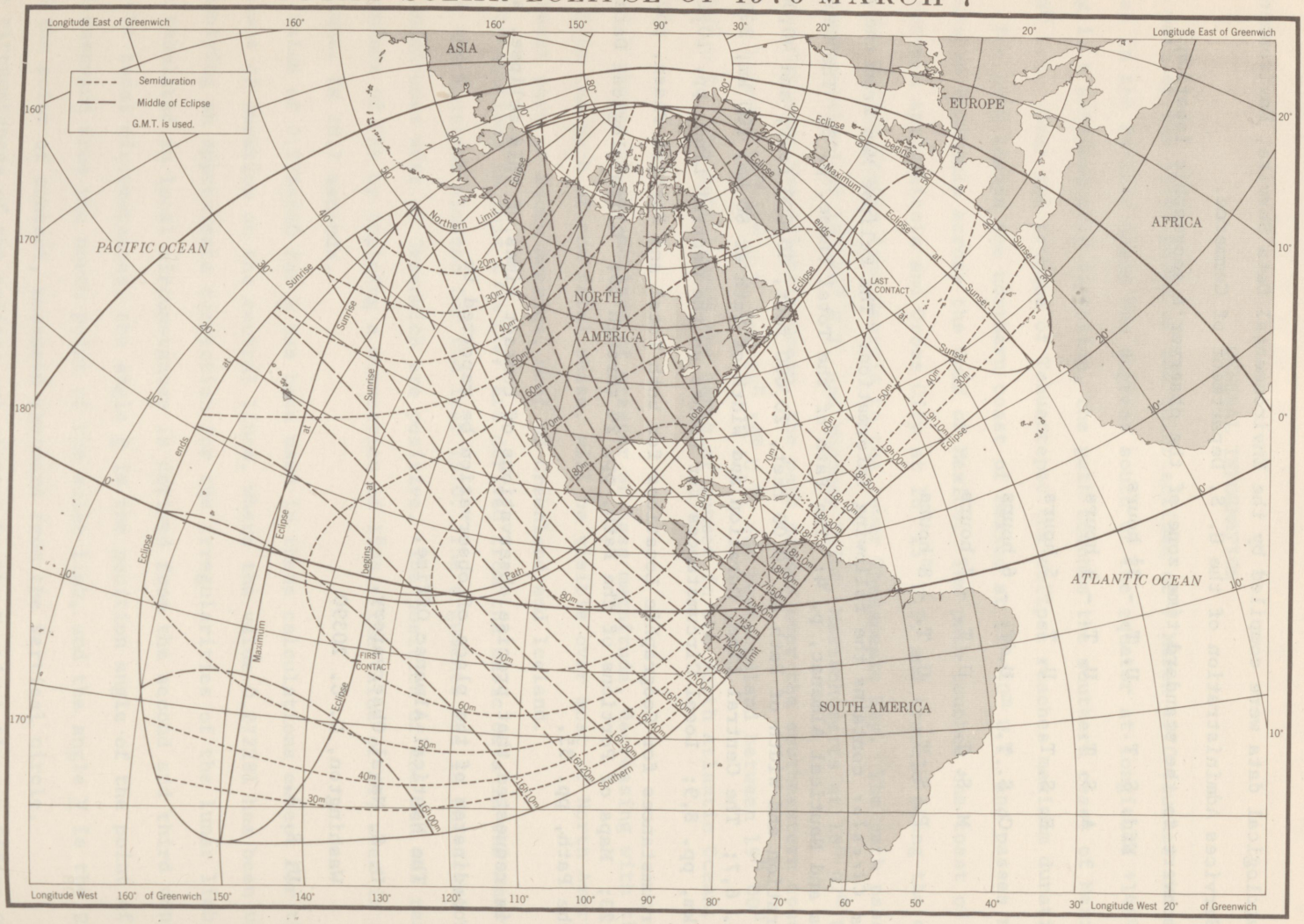
Nfd. S. T.	U. T. - $3\frac{1}{2}$ hours
A. S. T.	U. T. - 4 hours
E. S. T.	U. T. - 5 hours
C. S. T.	U. T. - 6 hours
M. S. T.	U. T. - 7 hours
P. S. T.	U. T. - 8 hours

This *Circular* contains the following information: The Eclipse Map from the American Ephemeris and Nautical Almanac, p. 4; The Path of the Total Phase, p. 5; The Central Line, Duration and Width of Path at 10,00 feet, 20,000 feet, 30,000 feet, and 40,000 feet, pp. 6,7; The Central Line, Duration and Width of Path at 80 km, 100 km, 200 km, and 300 km, pp. 8,9; Local Circumstances for Points on the Central Line, pp. 10,11; Local Circumstances for Geographic Locations for both Total and Partial Phase, pp. 12 through 23; Maps of Portions of the Path, pp. 24 through 33; Climatological Data, pp. 34; Map of the Path, pp. 35.

It is requested that precise observations of contact times of this eclipse, as well as the coordinates of the place of observation be reported to

The Nautical Almanac Office,
U. S. Naval Observatory,
Washington, D. C. 20390
U. S. A.

TOTAL SOLAR ECLIPSE OF 1970 MARCH 7



PATH OF THE TOTAL PHASE

Universal Time h m	Northern Limit Latitude ° ′	Northern Limit Longitude ° ′	Central Line Latitude ° ′	Central Line Longitude ° ′	Southern Limit Latitude ° ′	Southern Limit Longitude ° ′
Limit	- 1 33	+148 35	- 2 00	+148 33	- 2 27	+148 30
16 05	1 41.9	146 36.1	2 20.0	143 44.7	2 53.3	141 56.4
06	1 55.9	141 15.1	2 26.6	139 55.6	2 57.0	138 45.0
07	1 55.9	138 28.9	2 25.6	137 26.0	2 55.4	136 27.7
08	1 52.4	136 22.7	2 21.7	135 27.9	2 51.2	134 36.0
09	1 46.9	134 37.9	2 16.1	133 47.9	2 45.5	133 00.1
10	1 40.2	133 06.8	2 09.3	132 20.1	2 38.6	131 35.2
16 11	- 1 32.5	+131 45.6	- 2 01.6	+131 01.3	- 2 31.0	+130 18.5
13	1 15.2	129 24.2	1 44.4	128 43.1	2 13.8	128 03.2
15	0 56.0	127 22.6	1 25.3	126 43.6	1 54.8	126 05.5
16 20	- 0 02.6	+123 12.9	- 0 32.2	+122 36.8	- 1 02.0	+122 01.4
25	+ 0 55.7	119 52.3	+ 0 25.9	119 17.6	- 0 04.0	118 43.4
30	1 57.3	117 02.7	1 27.4	116 28.7	+ 0 57.4	115 55.2
35	3 01.5	114 34.8	2 31.5	114 01.4	2 01.5	113 28.2
16 40	+ 4 07.7	+112 23.2	+ 3 37.8	+111 50.0	+ 3 07.7	+111 17.1
45	5 15.7	110 24.1	4 45.8	109 51.1	4 15.7	109 18.3
50	6 25.3	108 35.0	5 55.3	108 02.1	5 25.4	107 29.3
55	7 36.3	106 53.8	7 06.4	106 21.0	6 36.5	105 48.3
17 00	+ 8 48.6	+105 19.1	+ 8 18.8	+104 46.3	+ 7 48.9	+104 13.7
05	10 02.3	103 49.7	9 32.5	103 17.0	9 02.7	102 44.4
10	11 17.2	102 24.5	10 47.5	101 51.9	10 17.8	101 19.4
15	12 33.5	101 02.7	12 03.7	100 30.1	11 34.1	99 57.7
20	13 51.0	99 43.5	13 21.3	99 11.1	12 51.6	98 38.8
25	15 09.8	98 26.2	14 40.1	97 53.9	14 10.5	97 21.8
17 30	+16 30.0	+ 97 10.2	+16 00.3	+ 96 38.1	+15 30.7	+ 96 06.1
35	17 51.6	95 54.8	17 21.9	95 23.0	16 52.2	94 51.2
40	19 14.7	94 39.5	18 44.9	94 07.9	18 15.2	93 36.3
45	20 39.4	93 23.5	20 09.5	92 52.2	19 39.6	92 21.0
50	22 05.8	92 06.4	21 35.7	91 35.4	21 05.7	91 04.5
55	23 33.9	90 47.2	23 03.6	90 16.7	22 33.5	89 46.2
18 00	+25 04.0	+ 89 25.4	+24 33.5	+ 88 55.4	+24 03.2	+ 88 25.4
05	26 36.2	88 00.0	26 05.4	87 30.5	25 34.8	87 01.1
10	28 10.7	86 30.0	27 39.6	86 01.2	27 08.7	85 32.5
15	29 47.7	84 54.2	29 16.2	84 26.3	28 44.9	83 58.4
20	31 27.5	83 11.2	30 55.6	82 44.4	30 23.9	82 17.4
25	33 10.5	81 19.3	32 38.1	80 53.6	32 05.9	80 27.9
18 30	+34 57.0	+ 79 16.1	+34 24.0	+ 78 51.9	+33 51.3	+ 78 27.6
35	36 47.6	76 58.6	36 14.0	76 36.3	35 40.7	76 13.8
40	38 43.0	74 22.6	38 08.7	74 02.7	37 34.7	73 42.5
45	40 44.2	71 22.1	40 09.0	71 05.4	39 34.3	70 48.2
50	42 52.4	67 47.9	42 16.3	67 35.5	41 40.7	67 22.3
55	45 09.7	63 24.4	44 32.5	63 18.2	43 55.8	63 10.9
19 00	+47 39.8	+ 57 41.8	+47 01.2	+ 57 45.5	+46 23.2	+ 57 47.5
02	48 44.9	54 49.2	48 05.6	54 59.0	47 26.9	55 06.5
04	49 54.1	51 24.7	49 13.9	51 42.7	48 34.4	51 57.9
06	51 09.1	47 11.3	50 27.8	47 42.0	49 47.2	48 08.3
19 07	+51 49.7	+ 44 35.9	+51 07.6	+ 45 16.1	+50 26.3	+ 45 50.7
08	52 33.6	41 29.7	51 50.4	42 23.7	51 08.1	43 10.0
09	53 22.7	37 31.0	52 37.5	38 49.0	51 53.7	39 54.0
10	54 23.5	31 27.3	53 33.2	33 48.2	52 46.0	35 33.4
Limit	+55 26	+ 22 28	+55 01	+ 22 26	+54 35	+ 22 24

CENTRAL LINE OF TOTAL ECLIPSE

Universal Time	10,000 Feet		20,000 Feet		30,000 Feet		40,000 Feet	
	Latitude	Longitude	Latitude	Longitude	Latitude	Longitude	Latitude	Longitude
h m	° ′	° ′	° ′	° ′	° ′	° ′	° ′	° ′
16 05	- 2 21.7	+143 26.2	- 2 23.2	+143 08.8	- 2 24.7	+142 52.3	- 2 26.1	+142 36.5
06	2 27.5	139 45.3	2 28.3	139 35.2	2 29.2	139 25.3	2 30.0	139 15.6
07	2 26.3	137 18.2	2 27.0	137 10.4	2 27.6	137 02.7	2 28.3	136 55.1
08	2 22.3	135 21.3	2 22.9	135 14.8	2 23.4	135 08.3	2 24.0	135 01.9
09	2 16.6	133 42.1	2 17.1	133 36.4	2 17.6	133 30.7	2 18.1	133 25.0
10	2 09.8	132 14.9	2 10.2	132 09.8	2 10.6	132 04.7	2 11.1	131 59.6
16 11	- 2 02.0	+130 56.6	- 2 02.5	+130 51.9	- 2 02.9	+130 47.2	- 2 03.3	+130 42.5
13	1 44.8	128 39.0	1 45.1	128 35.0	1 45.5	128 30.9	1 45.8	128 26.9
15	1 25.6	126 39.9	1 25.9	126 36.3	1 26.3	126 32.7	1 26.6	126 29.1
16 20	- 0 32.5	+122 34.0	- 0 32.8	+122 31.1	- 0 33.1	+122 28.2	- 0 33.4	+122 25.3
25	+ 0 25.6	119 15.2	+ 0 25.3	119 12.8	+ 0 25.0	119 10.3	+ 0 24.8	119 07.9
30	1 27.1	116 26.7	1 26.8	116 24.6	1 26.6	116 22.5	1 26.3	116 20.4
35	2 31.2	113 59.5	2 30.9	113 57.7	2 30.6	113 55.9	2 30.3	113 54.0
16 40	+ 3 37.4	+111 48.4	+ 3 37.1	+111 46.8	+ 3 36.8	+111 45.1	+ 3 36.5	+111 43.5
45	4 45.4	109 49.6	4 45.1	109 48.2	4 44.7	109 46.7	4 44.4	109 45.2
50	5 55.0	108 00.7	5 54.6	107 59.4	5 54.2	107 58.1	5 53.9	107 56.8
55	7 06.0	106 19.8	7 05.6	106 18.6	7 05.2	106 17.4	7 04.8	106 16.2
17 00	+ 8 18.4	+104 45.2	+ 8 17.9	+104 44.2	+ 8 17.5	+104 43.1	+ 8 17.1	+104 42.0
05	9 32.0	103 16.0	9 31.6	103 15.0	9 31.1	103 14.0	9 30.7	103 13.0
10	10 47.0	101 51.0	10 46.5	101 50.1	10 46.0	101 49.2	10 45.5	101 48.3
15	12 03.2	100 29.3	12 02.7	100 28.5	12 02.1	100 27.7	12 01.6	100 26.9
20	13 20.7	99 10.3	13 20.1	99 09.6	13 19.6	99 08.9	13 19.0	99 08.2
25	14 39.5	97 53.3	14 38.9	97 52.7	14 38.3	97 52.0	14 37.7	97 51.4
17 30	+15 59.6	+ 96 37.5	+15 59.0	+ 96 37.0	+15 58.3	+ 96 36.4	+15 57.7	+ 96 35.9
35	17 21.2	95 22.5	17 20.5	95 22.0	17 19.8	95 21.5	17 19.1	95 21.0
40	18 44.1	94 07.5	18 43.4	94 07.1	18 42.7	94 06.7	18 41.9	94 06.3
45	20 08.7	92 51.9	20 07.9	92 51.6	20 07.1	92 51.3	20 06.3	92 51.0
50	21 34.8	91 35.2	21 34.0	91 35.0	21 33.2	91 34.7	21 32.3	91 34.5
55	23 02.7	90 16.6	23 01.9	90 16.4	23 01.0	90 16.3	23 00.1	90 16.1
18 00	+24 32.6	+ 88 55.3	+24 31.6	+ 88 55.3	+24 30.7	+ 88 55.2	+24 29.7	+ 88 55.1
05	26 04.4	87 30.6	26 03.4	87 30.6	26 02.4	87 30.6	26 01.4	87 30.7
10	27 38.5	86 01.4	27 37.4	86 01.5	27 36.4	86 01.7	27 35.3	86 01.8
15	29 15.1	84 26.6	29 13.9	84 26.8	29 12.8	84 27.1	29 11.7	84 27.4
20	30 54.4	82 44.8	30 53.2	82 45.1	30 52.0	82 45.5	30 50.8	82 45.9
25	32 36.8	80 54.2	32 35.5	80 54.7	32 34.2	80 55.3	32 32.9	80 55.8
18 30	+34 22.6	+ 78 52.7	+34 21.3	+ 78 53.4	+34 19.9	+ 78 54.1	+34 18.6	+ 78 54.9
35	36 12.5	76 37.3	36 11.1	76 38.2	36 09.6	76 39.2	36 08.2	76 40.1
40	38 07.1	74 03.9	38 05.6	74 05.2	38 04.0	74 06.4	38 02.4	74 07.6
45	40 07.3	71 07.0	40 05.6	71 08.6	40 03.9	71 10.1	40 02.2	71 11.7
50	42 14.4	67 37.5	42 12.6	67 39.6	42 10.8	67 41.7	42 08.9	67 43.7
55	44 30.5	63 21.0	44 28.5	63 23.8	44 26.4	63 26.6	44 24.4	63 29.3
19 00	+46 58.9	+ 57 49.5	+46 56.7	+ 57 53.4	+46 54.4	+ 57 57.4	+46 52.1	+ 58 01.4
02	48 03.2	55 03.7	48 00.8	55 08.4	47 58.4	55 13.1	47 56.0	55 17.8
04	49 11.4	51 48.5	49 08.8	51 54.3	49 06.2	52 00.0	49 03.7	52 05.7
06	50 25.0	47 49.4	50 22.2	47 56.8	50 19.4	48 04.1	50 16.6	48 11.4
19 07	+51 04.7	+ 45 24.8	+51 01.7	+ 45 33.4	+50 58.8	+ 45 41.9	+50 55.9	+ 45 50.4
08	51 47.2	42 34.3	51 44.0	42 44.7	51 40.9	42 55.0	51 37.8	43 05.1
09	52 34.0	39 02.7	52 30.5	39 16.1	52 27.1	39 29.4	52 23.6	39 42.4
10	+53 28.9	+ 34 09.4	+53 24.8	+ 34 29.8	53 20.6	34 49.6	53 16.6	35 08.8
11	.. .. .	... .. .	.. .. .	... .. .	+54 48.3	+ 24 08.7	+54 36.2	+ 25 54.4

DURATION OF TOTAL PHASE AND WIDTH OF PATH ON CENTRAL LINE

Universal Time	10,000 Feet Duration	10,000 Feet Width of Path	20,000 Feet Duration	20,000 Feet Width of Path	30,000 Feet Duration	30,000 Feet Width of Path	40,000 Feet Duration	40,000 Feet Width of Path
h m	m s	mi	m s	mi	m s	mi	m s	mi
16 05	1 35.8	65	1 36.4	66	1 36.9	66	1 37.3	66
06	1 43.0	69	1 43.3	69	1 43.6	69	1 43.9	69
07	1 48.1	71	1 48.3	71	1 48.6	71	1 48.9	71
08	1 52.3	73	1 52.5	73	1 52.8	73	1 53.0	73
09	1 56.0	75	1 56.2	75	1 56.4	75	1 56.6	75
10	1 59.4	76	1 59.6	76	1 59.8	76	1 60.0	76
16 11	2 02.5	77	2 02.7	78	2 02.9	78	2 03.1	78
13	2 08.2	79	2 08.4	80	2 08.5	80	2 08.7	80
15	2 13.3	82	2 13.5	82	2 13.6	82	2 13.8	82
16 20	2 24.4	86	2 24.6	86	2 24.7	87	2 24.9	87
25	2 33.9	90	2 34.0	90	2 34.2	90	2 34.3	90
30	2 42.3	93	2 42.4	93	2 42.5	93	2 42.6	93
35	2 49.6	94	2 49.7	94	2 49.9	94	2 50.0	95
16 40	2 56.2	97	2 56.3	97	2 56.4	97	2 56.5	97
45	3 02.0	98	3 02.1	98	3 02.2	98	3 02.3	98
50	3 07.2	99	3 07.3	99	3 07.4	99	3 07.5	99
55	3 11.7	100	3 11.8	100	3 11.9	99	3 12.0	99
17 00	3 15.6	100	3 15.7	100	3 15.8	100	3 15.9	100
05	3 18.9	100	3 19.0	100	3 19.1	100	3 19.2	100
10	3 21.7	100	3 21.8	100	3 21.9	100	3 22.1	100
15	3 24.0	100	3 24.1	100	3 24.2	100	3 24.3	100
20	3 25.7	99	3 25.8	99	3 25.9	99	3 26.0	99
25	3 26.9	99	3 27.0	99	3 27.1	99	3 27.2	99
17 30	3 27.6	98	3 27.7	98	3 27.8	98	3 27.9	98
35	3 27.8	98	3 28.0	98	3 28.0	98	3 28.2	98
40	3 27.6	97	3 27.7	97	3 27.8	97	3 27.9	97
45	3 26.8	96	3 26.9	96	3 27.0	96	3 27.1	96
50	3 25.6	95	3 25.7	95	3 25.8	95	3 25.9	95
55	3 23.9	94	3 23.9	94	3 24.1	94	3 24.2	95
18 00	3 21.7	93	3 21.7	93	3 21.9	93	3 22.0	93
05	3 19.0	92	3 19.1	92	3 19.2	92	3 19.3	92
10	3 15.8	91	3 15.9	91	3 16.0	91	3 16.1	91
15	3 12.1	90	3 12.2	90	3 12.3	90	3 12.4	90
20	3 07.9	89	3 08.0	89	3 08.1	89	3 08.3	89
25	3 03.2	87	3 03.3	87	3 03.4	87	3 03.5	87
18 30	2 58.0	86	2 58.1	86	2 58.2	86	2 58.3	86
35	2 52.1	84	2 52.2	84	2 52.3	84	2 52.4	84
40	2 45.5	82	2 45.7	83	2 45.8	83	2 45.9	83
45	2 38.3	81	2 38.4	81	2 38.5	81	2 38.6	81
50	2 30.2	79	2 30.3	79	2 30.4	79	2 30.6	79
55	2 21.0	76	2 21.1	76	2 21.2	76	2 21.4	76
19 00	2 10.3	74	2 10.5	74	2 10.6	74	2 10.7	74
02	2 05.4	72	2 05.6	72	2 05.7	72	2 05.9	72
04	2 00.1	71	2 00.2	71	2 00.4	71	2 00.6	71
06	1 53.9	69	1 54.1	69	1 54.3	69	1 54.5	69
19 07	1 50.5	68	1 50.7	68	1 50.9	68	1 51.1	68
08	1 46.6	67	1 46.9	67	1 47.1	67	1 47.3	68
09	1 42.1	66	1 42.4	66	1 42.7	66	1 42.9	66
10	1 36.3	63	1 36.7	63	1 37.0	64	1 37.4	64
11	. .. .	...	. .. .	...	1 25.8	60	1 27.5	60

CENTRAL LINE OF TOTAL ECLIPSE

Universal Time	80 Km		100 Km		200 Km		300 Km	
	Latitude	Longitude	Latitude	Longitude	Latitude	Longitude	Latitude	Longitude
h m	° ′	° ′	° ′	° ′	° ′	° ′	° ′	° ′
16 00	.. .. .	... .. .	.. .. .	... .. .	.. .. .	... .. .	− 3 41.6	+140 35.7
01	.. .. .	... .. .	.. .. .	... .. .	− 3 01.6	+145 46.6	3 44.0	137 38.1
02	.. .. .	... .. .	.. .. .	... .. .	3 17.8	140 18.3	3 42.0	135 27.7
03	.. .. .	... .. .	− 2 43.0	+144 26.9	3 18.9	137 32.3	3 37.7	133 40.8
04	− 2 46.0	+141 23.6	2 52.8	140 05.2	3 16.2	135 26.7	3 32.1	132 08.7
05	2 48.1	138 24.3	2 52.8	137 28.3	3 11.5	133 42.4	3 25.5	130 46.9
16 07	− 2 41.0	+134 24.2	− 2 44.3	+133 44.8	− 2 58.5	+130 51.3	− 3 10.0	+128 25.2
09	2 27.9	131 27.9	2 30.6	130 56.0	2 42.5	128 30.8	2 52.6	126 23.8
11	2 11.6	129 04.1	2 13.9	128 36.8	2 24.5	126 30.2	2 33.8	124 36.8
13	1 53.3	127 00.9	1 55.4	126 36.8	2 05.1	124 43.5	2 13.8	123 00.6
15	1 33.5	125 12.2	1 35.5	124 50.4	1 44.6	123 07.5	1 53.0	121 33.0
16 20	− 0 39.6	+121 23.4	− 0 41.4	+121 05.7	− 0 50.0	+119 41.1	− 0 57.9	+118 22.0
25	+ 0 18.6	118 15.6	+ 0 16.9	118 00.6	+ 0 08.4	116 48.3	+ 0 00.4	115 40.0
30	1 20.0	115 35.0	1 18.2	115 22.0	1 09.4	114 18.7	1 01.1	113 18.7
35	2 23.8	113 14.0	2 21.9	113 02.4	2 12.6	112 06.4	2 03.8	111 12.9
16 40	+ 3 29.5	+111 07.8	+ 3 27.5	+110 57.5	+ 3 17.6	+110 07.3	+ 3 08.1	+109 19.2
45	4 36.9	109 13.1	4 34.7	109 03.9	4 24.1	108 18.6	4 13.9	107 35.3
50	5 45.8	107 27.8	5 43.5	107 19.4	5 32.0	106 38.5	5 21.0	105 59.2
55	6 56.1	105 49.9	6 53.6	105 42.3	6 41.3	105 05.3	6 29.3	104 29.6
17 00	+ 8 07.7	+104 18.2	+ 8 05.0	+104 11.3	+ 7 51.7	+103 37.7	+ 7 38.9	+103 05.3
05	9 20.6	102 51.5	9 17.7	102 45.3	9 03.4	102 14.8	8 49.5	101 45.4
10	10 34.7	101 28.9	10 31.6	101 23.2	10 16.2	100 55.6	10 01.3	100 29.1
15	11 50.0	100 09.4	11 46.7	100 04.4	11 30.2	99 39.5	11 14.2	99 15.6
20	13 06.6	98 52.5	13 03.0	98 48.0	12 45.3	98 25.8	12 28.2	98 04.4
25	14 24.4	97 37.5	14 20.6	97 33.5	14 01.6	97 13.8	13 43.4	96 54.8
17 30	+15 43.5	+ 96 23.7	+15 39.4	+ 96 20.2	+15 19.2	+ 96 03.0	+14 59.7	+ 95 46.4
35	17 04.0	95 10.6	16 59.6	95 07.6	16 38.1	94 52.8	16 17.2	94 38.6
40	18 25.8	93 57.6	18 21.2	93 55.0	17 58.2	93 42.7	17 36.1	93 30.8
45	19 49.2	92 44.0	19 44.2	92 42.0	19 19.8	92 32.1	18 56.2	92 22.6
50	21 14.1	91 29.3	21 08.8	91 27.8	20 42.9	91 20.5	20 17.8	91 13.4
55	22 40.7	90 12.8	22 35.1	90 11.8	22 07.6	90 07.2	21 41.0	90 02.7
18 00	+24 09.2	+ 88 53.8	+24 03.2	+ 88 53.4	+23 33.9	+ 88 51.5	+23 05.7	+ 88 49.7
05	25 39.6	87 31.5	25 33.2	87 31.7	25 02.2	87 32.8	24 32.2	87 33.8
10	27 12.1	86 04.9	27 05.4	86 05.8	26 32.4	86 10.1	26 00.6	86 14.3
15	28 47.0	84 33.0	28 39.8	84 34.6	28 04.8	84 42.6	27 31.1	84 50.1
20	30 24.5	82 54.5	30 16.9	82 57.0	29 39.7	83 08.9	29 03.9	83 20.3
25	32 05.0	81 07.7	31 56.8	81 11.2	31 17.3	81 27.7	30 39.2	81 43.4
18 30	+33 48.7	+ 79 10.7	+33 40.1	+ 79 15.2	+32 57.9	+ 79 37.2	+32 17.3	+ 79 57.9
35	35 36.2	77 00.7	35 27.0	77 06.6	34 41.9	77 34.9	33 58.7	78 01.6
40	37 28.1	74 34.1	37 18.2	74 41.6	36 30.0	75 17.9	35 43.8	75 51.8
45	39 25.3	71 45.8	39 14.6	71 55.5	38 22.7	72 41.8	37 33.2	73 24.7
50	41 28.8	68 28.1	41 17.2	68 40.7	40 21.1	69 40.3	39 27.7	70 35.0
55	43 40.4	64 28.6	43 27.8	64 45.3	42 26.6	66 03.5	41 28.5	67 14.4
19 00	+46 03.0	+ 59 24.7	+45 48.9	+ 59 47.8	+44 41.2	+ 61 34.8	+43 37.5	+ 63 09.6
02	47 04.2	56 55.8	46 49.4	57 22.8	45 38.4	59 26.3	44 31.9	61 14.3
04	48 08.6	54 03.8	47 52.9	54 35.9	46 38.1	57 01.0	45 28.4	59 05.7
06	49 17.2	50 39.4	49 00.4	51 18.8	47 40.8	54 13.7	46 27.3	56 40.2
08	50 31.8	46 24.8	50 13.5	47 16.0	48 47.5	50 55.5	47 29.3	53 52.2
10	51 56.6	40 37.4	51 35.5	41 52.2	49 59.9	46 50.2	48 35.3	50 32.7
19 12	+53 52.5	+ 29 36.4	+53 20.0	+ 32 47.2	+51 21.5	+ 41 19.9	+49 47.0	+ 46 24.7
13	.. .. .	... .. .	.. .. .	... .. .	52 09.1	37 29.0	50 26.0	43 51.6
14	.. .. .	... .. .	.. .. .	... .. .	+53 08.6	+ 31 35.0	51 08.4	40 46.6
15	.. .. .	... .. .	.. .. .	... .. .	.. .. .	... .. .	51 56.5	36 44.7
16	.. .. .	... .. .	.. .. .	... .. .	.. .. .	... .. .	+52 59.9	+ 30 03.0

DURATION OF TOTAL PHASE AND WIDTH OF PATH ON CENTRAL LINE

Universal Time	80 Km		100 Km		200 Km		300 Km	
	Duration	Width of Path	Duration	Width of Path	Duration	Width of Path	Duration	Width of Path
h m	m s	mi	m s	mi	m s	mi	m s	mi
16 00	. .. .	...	. .. .	...	. .. .	...	1 39.6	66
01	. .. .	...	. .. .	...	1 30.3	62	1 45.9	69
02	. .. .	...	. .. .	...	1 40.8	67	1 50.7	71
03	. .. .	...	1 33.4	64	1 46.6	69	1 54.8	73
04	1 39.3	67	1 41.8	68	1 51.2	72	1 58.6	75
05	1 45.4	70	1 47.3	70	1 55.2	74	2 02.0	76
07	1 54.1	73	1 55.5	74	2 02.1	77	2 08.1	79
09	2 01.0	76	2 02.3	76	2 08.1	79	2 13.6	81
11	2 07.0	79	2 08.1	79	2 13.5	81	2 18.6	83
13	2 12.3	81	2 13.3	81	2 18.4	83	2 23.3	85
15	2 17.2	83	2 18.1	84	2 23.0	85	2 27.7	86
16 20	2 27.9	87	2 28.8	88	2 33.2	88	2 37.6	90
25	2 37.2	91	2 38.0	91	2 42.2	92	2 46.4	93
30	2 45.4	93	2 46.1	93	2 50.2	94	2 54.2	95
35	2 52.6	96	2 53.4	96	2 57.3	96	3 01.2	97
16 40	2 59.1	97	2 59.8	97	3 03.6	98	3 07.4	99
45	3 04.8	99	3 05.6	98	3 09.3	99	3 13.0	100
50	3 09.9	100	3 10.7	99	3 14.3	100	3 18.0	100
55	3 14.4	100	3 15.2	100	3 18.8	101	3 22.4	101
17 00	3 18.3	100	3 19.0	101	3 22.6	101	3 26.2	101
05	3 21.6	100	3 22.3	101	3 25.8	101	3 29.4	101
10	3 24.4	100	3 25.1	101	3 28.6	101	3 32.1	101
15	3 26.6	100	3 27.3	100	3 30.8	101	3 34.2	100
20	3 28.3	100	3 29.0	100	3 32.5	100	3 35.9	100
25	3 29.5	100	3 30.2	99	3 33.6	100	3 37.1	100
17 30	3 30.2	99	3 30.9	98	3 34.3	99	3 37.7	100
35	3 30.4	98	3 31.1	98	3 34.5	98	3 37.9	99
40	3 30.2	97	3 30.8	97	3 34.2	97	3 37.6	98
45	3 29.4	96	3 30.0	97	3 33.4	96	3 36.8	97
50	3 28.1	96	3 28.8	95	3 32.2	96	3 35.5	96
55	3 26.4	95	3 27.1	94	3 30.4	95	3 33.8	95
18 00	3 24.2	93	3 24.9	93	3 28.2	94	3 31.6	95
05	3 21.6	92	3 22.2	93	3 25.6	93	3 29.0	93
10	3 18.4	91	3 19.1	91	3 22.4	92	3 25.8	92
15	3 14.7	90	3 15.4	90	3 18.8	91	3 22.2	91
20	3 10.6	89	3 11.2	89	3 14.7	89	3 18.1	90
25	3 05.9	87	3 06.6	88	3 10.0	88	3 13.5	89
18 30	3 00.6	86	3 01.3	86	3 04.9	87	3 08.4	87
35	2 54.8	85	2 55.5	85	2 59.1	86	3 02.7	86
40	2 48.4	83	2 49.1	83	2 52.8	84	2 56.4	85
45	2 41.2	81	2 42.0	81	2 45.8	83	2 49.5	83
50	2 33.3	79	2 34.0	80	2 38.0	80	2 41.9	81
55	2 24.3	77	2 25.1	77	2 29.3	78	2 33.4	79
19 00	2 13.9	75	2 14.9	75	2 19.4	76	2 23.8	76
02	2 09.3	73	2 10.3	73	2 15.0	74	2 19.6	76
04	2 04.2	72	2 05.3	72	2 10.3	74	2 15.2	75
06	1 58.6	71	1 59.8	71	2 05.2	72	2 10.4	73
08	1 52.1	68	1 53.5	68	1 59.6	70	2 05.2	71
10	1 44.2	66	1 45.8	67	1 53.1	69	1 59.4	70
19 12	1 31.2	62	1 34.6	63	1 45.2	66	1 52.7	68
13	. .. .	...	. .. .	...	1 40.2	65	1 48.9	67
14	. .. .	...	. .. .	...	1 33.1	62	1 44.5	66
15	. .. .	...	. .. .	...	. .. .	...	1 39.2	64
16	. .. .	...	. .. .	...	. .. .	...	1 31.2	61

LOCAL CIRCUMSTANCES FOR POINTS ON CENTRAL LINE

Universal Time	Central Line Latitude	Central Line Longitude	First Contact Universal Time	First Contact P	First Contact V	Second Contact Universal Time	Second Contact P	Second Contact V
h m	° ′	° ′	h m s	°	°	h m s	°	°
16 05	- 2 20.0	+143 44.7	.. ..	...	...	16 04 11.0	63	155
06	2 26.6	139 55.6	.. ..	...	...	16 05 07.3	62	153
07	2 25.6	137 26.0	.. ..	...	...	16 06 04.7	61	152
08	2 21.7	135 27.9	.. ..	...	...	16 07 02.5	60	152
09	2 16.1	133 47.9	15 08 11.1	242	334	16 08 00.6	60	151
10	2 09.3	132 20.1	15 08 27.7	241	333	16 08 58.9	60	150
16 11	- 2 01.6	+131 01.3	15 08 47.6	241	333	16 09 57.3	59	149
13	1 44.4	128 43.1	15 09 34.7	240	332	16 11 54.4	58	148
15	1 25.3	126 43.6	15 10 28.7	240	330	16 13 51.8	58	147
16 20	- 0 32.2	+122 36.8	15 13 04.1	238	328	16 18 46.2	56	144
25	+ 0 25.9	119 17.6	15 15 59.2	237	325	16 23 41.4	55	141
30	1 27.4	116 28.7	15 19 08.0	236	322	16 28 37.2	53	137
35	2 31.5	114 01.4	15 22 27.8	235	320	16 33 33.5	52	134
16 40	+ 3 37.8	+111 50.0	15 25 56.5	234	317	16 38 30.2	51	131
45	4 45.8	109 51.1	15 29 33.5	233	315	16 43 27.2	50	127
50	5 55.3	108 02.1	15 33 17.8	232	312	16 48 24.7	49	124
55	7 06.4	106 21.0	15 37 08.9	231	309	16 53 22.4	48	120
17 00	+ 8 18.8	+104 46.3	15 41 06.5	231	306	16 58 20.4	48	116
05	9 32.5	103 17.0	15 45 10.6	230	303	17 03 18.7	47	111
10	10 47.5	101 51.9	15 49 20.7	229	300	17 08 17.3	46	106
15	12 03.7	100 30.1	15 53 36.8	229	297	17 13 16.1	46	101
20	13 21.3	99 11.1	15 57 59.0	228	294	17 18 15.3	45	95
25	14 40.1	97 53.9	16 02 27.1	227	290	17 23 14.6	45	90
17 30	+16 00.3	+ 96 38.1	16 07 01.1	227	287	17 28 14.3	45	83
35	17 21.9	95 23.0	16 11 41.0	227	283	17 33 14.2	44	77
40	18 44.9	94 07.9	16 16 26.9	226	279	17 38 14.3	44	71
45	20 09.5	92 52.2	16 21 18.7	226	275	17 43 14.7	44	65
50	21 35.7	91 35.4	16 26 16.8	226	270	17 48 15.4	44	59
55	23 03.6	90 16.7	16 31 21.0	225	266	17 53 16.2	44	53
18 00	+24 33.5	+ 88 55.4	16 36 31.6	225	261	17 58 17.3	44	48
05	26 05.4	87 30.5	16 41 48.8	225	256	18 03 18.7	44	44
10	27 39.6	86 01.2	16 47 12.8	225	251	18 08 20.3	45	39
15	29 16.2	84 26.3	16 52 44.0	226	246	18 13 22.1	45	36
20	30 55.6	82 44.4	16 58 22.5	226	241	18 18 24.2	46	33
25	32 38.1	80 53.6	17 04 09.1	226	236	18 23 26.6	46	30
18 30	+34 24.0	+ 78 51.9	17 10 04.1	226	232	18 28 29.3	47	28
35	36 14.0	76 36.3	17 16 08.6	227	227	18 33 32.3	47	26
40	38 08.7	74 02.7	17 22 23.5	228	223	18 38 35.5	48	24
45	40 09.0	71 05.4	17 28 50.2	228	219	18 43 39.2	49	23
50	42 16.3	67 35.5	17 35 31.2	229	216	18 48 43.3	50	22
55	44 32.5	63 18.2	17 42 30.1	230	213	18 53 47.9	51	21
19 00	+47 01.2	+ 57 45.5	17 49 53.6	232	210	18 58 53.3	53	21
02	48 05.6	54 59.0	17 53 01.0	232	209	19 00 55.8	54	21
04	49 13.9	51 42.7	17 56 16.5	233	208	19 02 58.6	54	21
06	50 27.8	47 42.0	17 59 43.8	234	207	19 05 01.6	55	22
19 07	+51 07.6	+ 45 16.1	18 01 34.0	235	207	19 06 03.4	56	22
08	51 50.4	42 23.7	18 03 30.8	235	207	19 07 05.3	56	22
09	52 37.5	38 49.0	18 05 38.2	236	206	19 08 07.7	57	23
10	+53 33.2	+ 33 48.2	18 08 06.4	237	206	19 09 10.7	58	23

LOCAL CIRCUMSTANCES FOR POINTS ON CENTRAL LINE

Maximum Eclipse				Third Contact			Fourth Contact			Dura-	Width
Universal Time	Magni- tude	Sun's Alt.	Sun's Az.	Universal Time	P	V	Universal Time	P	V	tion	of Path
h m s		°	°	h m s	°	°	h m s	°	°	m s	*mi*
16 05 00.0	1.028	5	95	16 05 49.0	243	335	17 07 42.6	61	151	1 38.0	65
16 06 00.0	1.029	9	95	16 06 52.7	242	333	17 10 42.6	60	150	1 45.4	68
16 07 00.0	1.030	12	95	16 07 55.3	241	332	17 13 05.3	59	149	1 50.6	71
16 08 00.0	1.031	14	95	16 08 57.5	240	332	17 15 13.1	58	148	1 55.0	73
16 09 00.0	1.031	16	95	16 09 59.4	240	331	17 17 12.1	58	147	1 58.8	75
16 10 00.0	1.032	18	95	16 11 01.1	240	330	17 19 05.0	57	146	2 02.2	76
16 11 00.0	1.032	19	95	16 12 02.7	239	329	17 20 53.3	57	145	2 05.4	77
16 13 00.0	1.033	22	95	16 14 05.6	238	328	17 24 20.0	56	143	2 11.2	79
16 15 00.0	1.034	24	95	16 16 08.2	238	327	17 27 36.5	55	142	2 16.4	82
16 20 00.0	1.035	30	96	16 21 13.8	236	324	17 35 17.6	53	138	2 27.6	86
16 25 00.0	1.036	34	97	16 26 18.6	235	320	17 42 28.3	52	134	2 37.2	90
16 30 00.0	1.037	38	98	16 31 22.8	233	317	17 49 16.9	50	129	2 45.6	93
16 35 00.0	1.038	41	99	16 36 26.5	232	314	17 55 47.6	49	124	2 53.0	95
16 40 00.0	1.039	45	101	16 41 29.8	231	311	18 02 03.5	48	118	2 59.6	97
16 45 00.0	1.040	47	103	16 46 32.8	230	307	18 08 06.5	47	112	3 05.6	98
16 50 00.0	1.040	50	106	16 51 35.3	229	303	18 13 58.0	46	104	3 10.6	99
16 55 00.0	1.041	53	108	16 56 37.6	228	299	18 19 39.3	46	95	3 15.2	100
17 00 00.0	1.041	55	112	17 01 39.6	228	295	18 25 11.3	45	85	3 19.2	100
17 05 00.0	1.041	57	115	17 06 41.3	227	290	18 30 34.8	45	74	3 22.6	100
17 10 00.0	1.042	59	119	17 11 42.7	226	285	18 35 50.4	44	64	3 25.4	100
17 15 00.0	1.042	60	124	17 16 43.9	226	280	18 40 58.7	44	54	3 27.8	100
17 20 00.0	1.042	61	129	17 21 44.7	225	274	18 46 00.1	44	45	3 29.4	99
17 25 00.0	1.042	62	135	17 26 45.4	225	268	18 50 55.2	43	37	3 30.8	99
17 30 00.0	1.042	63	140	17 31 45.7	225	262	18 55 44.1	43	31	3 31.4	98
17 35 00.0	1.042	63	147	17 36 45.8	224	256	19 00 27.2	43	26	3 31.6	97
17 40 00.0	1.042	63	153	17 41 45.7	224	249	19 05 04.7	43	22	3 31.4	97
17 45 00.0	1.042	63	159	17 46 45.3	224	243	19 09 37.0	43	19	3 30.6	96
17 50 00.0	1.042	62	165	17 51 44.6	224	237	19 14 03.8	44	17	3 29.2	95
17 55 00.0	1.042	61	171	17 56 43.8	224	232	19 18 25.6	44	15	3 27.6	94
18 00 00.0	1.042	60	177	18 01 42.7	224	227	19 22 42.1	44	13	3 25.4	93
18 05 00.0	1.041	59	182	18 06 41.3	224	222	19 26 53.6	45	12	3 22.6	92
18 10 00.0	1.041	57	187	18 11 39.7	225	218	19 30 59.9	45	11	3 19.4	91
18 15 00.0	1.041	55	191	18 16 37.9	225	215	19 35 01.0	46	11	3 15.8	90
18 20 00.0	1.040	53	196	18 21 35.8	226	211	19 38 56.6	46	10	3 11.6	89
18 25 00.0	1.040	50	200	18 26 33.4	226	209	19 42 46.6	47	10	3 06.8	87
18 30 00.0	1.039	48	204	18 31 30.7	227	207	19 46 30.4	48	10	3 01.4	86
18 35 00.0	1.039	45	208	18 36 27.7	227	205	19 50 07.7	48	11	2 55.4	84
18 40 00.0	1.038	42	212	18 41 24.5	228	203	19 53 37.8	49	11	2 49.0	82
18 45 00.0	1.037	38	216	18 46 20.8	229	202	19 56 59.5	50	12	2 41.6	81
18 50 00.0	1.036	34	220	18 51 16.7	230	201	20 00 11.0	51	13	2 33.4	78
18 55 00.0	1.035	30	225	18 56 12.1	231	201	20 03 09.4	53	14	2 24.2	77
19 00 00.0	1.033	25	230	19 01 06.7	233	201	20 05 49.3	54	16	2 13.4	74
19 02 00.0	1.032	22	233	19 03 04.2	234	201	20 06 45.5	55	17	2 08.4	72
19 04 00.0	1.032	20	236	19 05 01.4	234	201	20 07 35.2	55	17	2 02.8	71
19 06 00.0	1.031	17	239	19 06 58.4	235	201	20 08 15.4	56	19	1 56.8	69
19 07 00.0	1.030	15	242	19 07 56.6	236	202	20 08 30.1	57	19	1 53.2	68
19 08 00.0	1.030	13	244	19 08 54.7	236	202	20 08 39.3	57	20	1 49.4	67
19 09 00.0	1.029	10	247	19 09 52.3	237	202	20 08 39.7	58	21	1 44.6	66
19 10 00.0	1.028	7	251	19 10 49.3	238	203	.. ..	...	...	1 38.6	63

LOCAL CIRCUMSTANCES

Geographic Locations	Latitude	Longitude	First Contact Universal Time	P	V	Second Contact Universal Time	P	V
	° ′	° ′	h m s	°	°	h m s	°	°
Mexico (Page 24)								
Acayucán	+17 59.0	+ 94 58.0	16 13 34.8	226	281	17 35 14.3	36	66
Coatzacoalcos	+18 10.0	+ 94 25.0	16 14 49.6	227	280	17 36 38.2	58	87
Córdoba	+18 55.0	+ 96 55.0	16 12 29.8	224	279			
Ejutla	+16 33.0	+ 96 45.0	16 07 55.1	226	285	17 29 31.0	5	43
Ixtepec	+16 32.0	+ 95 10.0	16 10 23.2	228	285	17 33 32.5	127	161
Jalapa	+19 32.0	+ 96 56.0	16 13 45.4	223	277			
Jesús Carranza	+17 28.0	+ 95 01.0	16 12 28.2	227	282	17 34 10.7	60	92
Juchitán	+16 27.0	+ 95 05.0	16 10 21.5	228	285			
Matias Romero	+16 52.0	+ 95 04.0	16 11 12.2	227	284	17 33 30.1	96	129
Minatitlán	+17 59.0	+ 94 32.0	16 14 16.4	227	281	17 36 05.3	61	91
Oaxaca	+17 05.0	+ 96 43.0	16 09 02.4	226	284			
Orizaba	+18 51.0	+ 97 08.0	16 12 02.3	223	279			
Pochutla	+15 46.0	+ 96 27.0	16 06 50.2	227	287	17 28 15.4	69	108
Puebla	+19 03.0	+ 98 10.0	16 10 58.3	222	278			
Renta	+15 58.0	+ 95 38.0	16 08 31.6	228	287			
Salina Cruz	+16 11.0	+ 95 12.0	16 09 38.9	228	286			
San Andrés Tuxtla	+18 28.0	+ 95 15.0	16 14 06.4	225	280	17 36 35.4	342	12
Tehuantepec	+16 21.0	+ 95 13.0	16 09 56.8	228	286			
Tuxtla Gutiérrez	+16 45.0	+ 93 09.0	16 14 10.0	229	284			
Veracruz	+19 11.0	+ 96 10.0	16 14 09.9	224	278			
Villahermosa	+18 00.0	+ 92 53.0	16 17 02.1	228	281			
Mexico (Page 25)								
Campeche	+19 50.0	+ 90 30.0	16 24 42.1	229	275			
Dzibalchén	+19 29.0	+ 89 42.0	16 25 28.1	230	275			
Felipe C. Puerto	+19 36.0	+ 88 02.0	16 28 46.9	231	274			
Hopelchén	+19 46.0	+ 89 50.0	16 25 45.7	229	274			
Maxcanú	+20 35.0	+ 90 00.0	16 27 01.1	228	272			
Mérida	+20 59.0	+ 89 39.0	16 28 24.1	228	271			
Motul	+21 06.0	+ 89 16.0	16 29 18.2	228	270			
Peto	+20 08.0	+ 88 53.0	16 28 10.7	230	273			
Progreso	+21 17.0	+ 89 39.0	16 28 58.5	228	270			
Ticul	+20 24.0	+ 89 31.0	16 27 31.7	229	272			
Tizimín	+21 10.0	+ 88 09.0	16 31 26.8	230	269			
Valladolid	+20 40.0	+ 88 11.0	16 30 27.5	230	271			
Xiatil	+19 48.0	+ 88 32.0	16 28 12.4	231	274			
United States (Page 27)								
Albany, Ga.	+31 37.0	+ 84 10.0	16 57 16.4	224	241			
Americus, Ga.	+32 04.0	+ 84 14.0	16 57 57.2	223	240			
Andalusia, Ala.	+31 20.0	+ 86 30.0	16 53 12.7	221	243			
Apalachicola, Fla.	+29 44.0	+ 84 59.0	16 52 39.8	225	246			
Bainbridge, Ga.	+30 54.0	+ 84 33.0	16 55 25.2	224	243			
Brunswick, Ga.	+31 09.0	+ 81 30.0	17 00 47.5	227	240	18 22 04.7	130	115
Cordele, Ga.	+31 59.0	+ 83 49.0	16 58 27.1	224	240			
Crestview, Fla.	+30 44.0	+ 86 34.0	16 52 00.2	222	244			
Daytona Beach, Fla.	+29 11.0	+ 81 03.0	16 58 24.7	229	243			
De Land, Fla.	+29 02.0	+ 81 18.0	16 57 43.6	229	244			
Dothan, Ala.	+31 12.0	+ 85 25.0	16 54 36.4	223	243			
Douglas, Ga.	+31 30.0	+ 82 54.0	16 59 04.7	225	240	18 19 28.2	356	343
Enterprise, Ala.	+31 20.0	+ 85 52.0	16 54 09.7	222	243			
Eufaula, Ala.	+31 55.0	+ 85 10.0	16 56 16.1	222	241			
Fitzgerald, Ga.	+31 43.0	+ 83 16.0	16 58 51.5	224	240			
Gainesville, Fla.	+29 37.0	+ 82 21.0	16 56 50.6	227	244			
Jacksonville, Fla.	+30 25.0	+ 81 39.0	16 59 21.1	227	241			
Jesup, Ga.	+31 36.0	+ 81 54.0	17 00 51.7	226	239	18 20 36.8	53	38
Lake City, Fla.	+30 12.0	+ 82 39.0	16 57 18.4	227	243	18 18 18.6	103	90
Lakeland, Fla.	+28 02.0	+ 81 59.0	16 54 52.5	229	247			

LOCAL CIRCUMSTANCES

Maximum Eclipse				Third Contact			Fourth Contact			Duration	Width of Path
Universal Time	Magnitude	Sun's Alt.	Sun's Az.	Universal Time	P	V	Universal Time	P	V		
h m s		°	°	h m s	°	°	h m s	°	°	m s	mi
17 36 58.8	1.042	63	149	17 38 43.3	233	262	19 02 17.3	43	25	3 29.0	97
17 38 20.8	1.042	64	151	17 40 03.5	210	237	19 03 34.4	43	23	3 25.3	97
17 35 13.1	0.958	61	146				19 00 18.3	47	35		
17 30 52.4	1.042	63	141	17 32 13.9	264	301	18 56 31.9	44	32	2 42.9	98
17 33 45.3	1.042	64	145	17 33 58.1	141	174	18 59 19.4	42	25	0 25.6	97
17 36 23.0	0.946	61	147				19 01 16.9	48	35		
17 35 52.4	1.042	64	148	17 37 34.2	208	238	19 01 17.0	43	25	3 23.5	97
17 33 44.6	0.996	64	145				18 59 19.0	42	24		
17 34 35.9	1.042	64	146	17 35 41.8	173	204	19 00 06.7	42	24	2 11.7	97
17 37 46.5	1.042	64	150	17 39 27.7	207	235	19 03 02.8	43	23	3 22.4	97
17 31 59.6	0.997	62	142				18 57 33.0	45	33		
17 34 41.3	0.954	61	145				18 59 47.0	47	36		
17 29 52.0	1.042	63	140	17 31 28.6	200	238	18 55 37.7	43	30	3 13.2	98
17 33 10.5	0.929	60	143				18 58 06.4	49	41		
17 31 46.2	0.999	64	143				18 57 27.2	42	26		
17 32 59.9	0.993	64	145				18 58 37.0	42	25		
17 37 24.2	1.042	63	149	17 38 13.1	287	316	19 02 37.4	44	27	1 37.7	97
17 33 17.9	0.997	64	145				18 58 53.9	42	25		
17 37 53.2	0.960	65	152				19 03 07.8	40	16		
17 37 06.8	0.968	62	148				19 02 09.4	47	32		
17 40 49.6	0.979	65	155				19 05 52.1	41	16		
17 48 40.2	0.962	64	166				19 12 53.7	40	10		
17 49 26.9	0.937	65	168				19 13 29.6	39	7		
17 52 39.4	0.902	65	174				19 16 05.8	37	1		
17 49 44.6	0.946	65	168				19 13 47.6	39	7		
17 50 58.5	0.966	64	169				19 14 56.3	40	10		
17 52 20.6	0.966	64	170				19 16 08.3	40	9		
17 53 14.5	0.960	63	172				19 16 54.4	40	8		
17 52 08.0	0.932	64	172				19 15 49.9	38	5		
17 52 53.8	0.972	63	171				19 16 37.8	41	9		
17 51 29.9	0.951	64	170				19 15 21.5	40	7		
17 55 20.9	0.936	64	175				19 18 38.9	39	4		
17 54 22.3	0.927	64	175				19 17 45.4	38	4		
17 52 08.2	0.917	65	172				19 15 45.0	38	3		
18 18 40.5	0.977	53	193				19 37 40.9	49	15		
18 19 09.7	0.966	52	193				19 37 58.7	49	16		
18 14 35.4	0.936	53	187				19 34 06.4	51	20		
18 14 47.0	0.999	55	190				19 34 45.3	47	13		
18 17 06.4	0.984	53	192				19 36 30.2	48	14		
18 22 13.4	1.040	52	198	18 22 22.1	141	125	19 40 43.0	45	8	0 17.4	88
18 19 42.1	0.976	52	194				19 38 28.6	49	15		
18 13 38.7	0.947	54	187				19 33 27.8	50	19		
18 20 18.2	0.948	54	199				19 39 13.3	42	3		
18 19 42.0	0.950	54	199				19 38 45.2	42	3		
18 16 08.3	0.960	53	190				19 35 33.8	49	17		
18 20 30.2	1.040	52	195	18 21 32.2	275	262	19 39 16.1	47	12	2 04.0	89
18 15 36.2	0.949	53	189				19 35 02.2	50	18		
18 17 29.9	0.951	52	191				19 36 32.9	50	18		
18 20 12.8	0.993	52	195				19 38 58.9	48	13		
18 18 50.4	0.984	54	196				19 38 06.7	44	7		
18 21 01.7	0.987	53	198				19 39 48.8	44	7		
18 22 10.9	1.040	52	198	18 23 45.0	219	203	19 40 38.2	46	10	3 08.2	88
18 19 09.9	1.040	54	196	18 20 01.2	168	154	19 38 20.6	45	8	1 42.6	89
18 17 11.0	0.943	56	197				19 36 45.5	41	2		

LOCAL CIRCUMSTANCES

Geographic Locations	Latitude	Longitude	First Contact Universal Time	P	V	Second Contact Universal Time	P	V
	° ′	° ′	h m s	°	°	h m s	°	°
United States (Page 27 *Continued*)								
McRae, Ga.	+32 02.0	+ 82 55.0	16 59 56.8	225	239			
Melbourne, Fla.	+28 04.0	+ 80 38.0	16 57 24.0	231	245			
Moultrie, Ga.	+31 11.0	+ 83 47.0	16 57 07.7	224	242			
Ocala, Fla.	+29 11.0	+ 82 09.0	16 56 28.3	228	244			
Orlando, Fla.	+28 33.0	+ 81 20.0	16 56 53.3	230	245			
Palatka, Fla.	+29 38.0	+ 81 40.0	16 58 03.0	228	243			
Panama City, Fla.	+30 10.0	+ 85 41.0	16 52 19.7	223	245			
Perry, Fla.	+30 08.0	+ 83 36.0	16 55 37.0	226	244	18 15 57.2	43	32
St. Augustine, Fla.	+29 54.0	+ 81 19.0	16 59 05.4	228	242			
Sanford, Fla.	+28 49.0	+ 81 17.0	16 57 24.4	229	244			
Savannah, Ga.	+32 08.0	+ 81 12.0	17 02 51.7	226	238	18 22 24.4	60	44
Tallahassee, Fla.	+30 26.0	+ 84 20.0	16 54 56.8	225	243			
Tampa, Fla.	+27 58.0	+ 82 32.0	16 53 46.6	229	247			
Thomasville, Ga.	+30 50.0	+ 83 59.0	16 56 12.2	225	242			
Troy, Ala.	+31 49.0	+ 86 00.0	16 54 50.3	222	242			
Valdosta, Ga.	+30 47.0	+ 83 17.0	16 57 14.8	225	242	18 17 28.9	22	10
Waycross, Ga.	+31 12.0	+ 82 22.0	16 59 26.5	226	240	18 19 21.5	50	37
United States (Page 28)								
Aiken, S. C.	+33 34.0	+ 81 44.0	17 04 18.8	224	235			
Allendale, S. C.	+33 01.0	+ 81 19.0	17 04 05.0	225	236	18 23 56.5	351	335
Anderson, S. C.	+34 30.0	+ 82 43.0	17 04 21.2	222	234			
Athens, Ga.	+33 57.0	+ 83 19.0	17 02 33.3	222	236			
Augusta, Ga.	+33 22.0	+ 81 58.0	17 03 37.8	224	236			
Charleston, S. C.	+32 54.0	+ 80 02.0	17 05 57.4	227	235	18 25 18.8	79	62
Clinton, S. C.	+34 27.0	+ 81 52.0	17 05 31.9	223	234			
Columbia, S. C.	+33 57.0	+ 81 07.0	17 05 52.4	225	234			
Conway, S. C.	+33 51.0	+ 79 04.0	17 08 56.6	227	233	18 27 44.1	72	53
Dublin, Ga.	+32 31.0	+ 82 54.0	17 00 46.9	224	238			
Fairfax, S. C.	+32 57.0	+ 81 15.0	17 04 04.9	225	236	18 23 42.8	3	347
Florence, S. C.	+34 11.0	+ 79 43.0	17 08 24.5	226	233	18 27 16.4	12	354
Gainesville, Ga.	+34 17.0	+ 83 50.0	17 02 21.8	221	235			
Georgetown, S. C.	+33 23.0	+ 79 18.0	17 07 52.6	227	234	18 27 11.5	93	74
Greenwood, S. C.	+34 11.0	+ 82 10.0	17 04 39.1	223	234			
Lake City, S. C.	+33 52.0	+ 79 46.0	17 07 51.2	226	233	18 26 37.9	31	13
Latta, S. C.	+34 21.0	+ 79 28.0	17 09 03.0	226	232	18 27 46.4	16	357
Macon, Ga.	+32 42.0	+ 83 39.0	16 59 56.2	223	238			
Marion, S. C.	+34 11.0	+ 79 23.0	17 08 55.9	226	232	18 27 32.6	32	14
Mullins, S. C.	+34 13.0	+ 79 16.0	17 09 10.0	226	232	18 27 43.6	37	18
Myrtle Beach, S. C.	+33 42.0	+ 78 54.0	17 08 59.5	227	233	18 28 11.4	95	76
Newberry, S. C.	+34 17.0	+ 81 39.0	17 05 35.3	224	234			
Orangeburg, S. C.	+33 28.0	+ 80 53.0	17 05 28.6	225	235	18 25 18.5	343	326
Statesboro, Ga.	+32 28.0	+ 81 47.0	17 02 27.5	225	237	18 22 18.5	3	348
Summerville, S. C.	+33 02.0	+ 80 11.0	17 05 55.1	226	235	18 25 02.8	61	44
Sumter, S. C.	+33 54.0	+ 80 22.0	17 06 57.6	225	234	18 26 30.9	346	328
Swainsboro, Ga.	+32 36.0	+ 82 21.0	17 01 46.7	225	238			
Sylvania, Ga.	+32 45.0	+ 81 40.0	17 03 06.1	225	237	18 23 13.3	345	330
Vidalia, Ga.	+32 14.0	+ 82 24.0	17 01 05.8	225	238			
Walterboro, S. C.	+32 54.0	+ 80 40.0	17 04 56.0	226	236	18 24 06.7	42	26
Wilmington, N. C.	+34 16.0	+ 77 55.0	17 11 23.4	228	231			
United States (Page 29)								
Burlington, N. C.	+36 05.0	+ 79 27.0	17 11 38.6	224	229			
Cape Charles, Va.	+37 17.0	+ 76 01.0	17 18 24.1	227	226	18 35 42.7	2	340
Cape Hatteras, N. C.	+35 16.0	+ 75 33.0	17 16 32.8	229	228			
Charlottesville, Va.	+38 08.0	+ 78 27.0	17 16 01.7	223	226			
Clinton, N. C.	+35 00.0	+ 78 20.0	17 11 46.1	226	230	18 29 54.9	37	17

LOCAL CIRCUMSTANCES

Maximum Eclipse Universal Time	Magnitude	Sun's Alt.	Sun's Az.	Third Contact Universal Time	P	V	Fourth Contact Universal Time	P	V	Duration	Width of Path
h m s		°	°	h m s	°	°	h m s	°	°	m s	*mi*
18 21 09.8	0.993	52	196				19 39 43.0	48	13		
18 19 24.2	0.916	55	200				19 38 23.5	40	359		
18 18 42.1	0.993	53	193				19 37 48.6	48	13		
18 18 33.4	0.971	54	197				19 37 53.4	43	5		
18 18 58.1	0.941	55	199				19 38 09.4	41	2		
18 19 56.8	0.971	54	198				19 38 58.6	43	5		
18 14 16.2	0.976	54	189				19 34 12.3	48	15		
18 17 33.9	1.040	54	194	18 19 10.6	227	215	19 37 02.4	46	10	3 13.4	89
18 20 51.6	0.969	53	199				19 39 41.1	43	5		
18 19 25.4	0.945	55	199				19 38 31.6	42	2		
18 23 55.6	1.040	51	199	18 25 26.8	212	195	19 41 58.6	47	10	3 02.4	87
18 16 48.7	0.998	54	192				19 36 21.2	47	13		
18 16 11.7	0.953	56	196				19 36 00.1	42	3		
18 17 54.9	0.997	53	193				19 37 12.8	47	13		
18 16 02.9	0.936	53	189				19 35 15.8	51	20		
18 18 57.2	1.040	53	194	18 20 25.6	249	236	19 38 05.9	47	11	2 56.7	89
18 20 56.6	1.040	52	197	18 22 31.6	221	206	19 39 40.8	46	10	3 10.1	88
18 24 50.7	0.983	50	198				19 42 27.8	49	14		
18 24 49.2	1.040	50	199	18 25 41.9	282	265	19 42 33.9	48	12	1 45.4	87
18 24 27.4	0.945	49	196				19 41 50.6	51	18		
18 22 54.8	0.945	50	195				19 40 40.4	51	18		
18 24 15.5	0.983	50	198				19 42 01.1	49	14		
18 26 36.4	1.040	50	202	18 27 54.1	193	174	19 44 01.5	47	9	2 35.3	86
18 25 39.8	0.962	49	198				19 42 54.9	50	16		
18 26 12.5	0.987	49	199				19 43 30.9	49	14		
18 29 06.7	1.039	48	203	18 30 29.3	201	181	19 45 53.0	47	9	2 45.2	86
18 21 48.1	0.983	51	196				19 40 08.6	49	14		
18 24 50.5	1.040	50	199	18 25 58.1	270	253	19 42 35.7	48	12	2 15.3	87
18 28 31.7	1.039	48	202	18 29 47.0	261	242	19 45 22.3	48	11	2 30.6	86
18 22 31.7	0.928	50	194				19 40 11.9	52	20		
18 28 15.0	1.039	49	203	18 29 18.5	180	161	19 45 15.8	47	9	2 07.0	86
18 24 54.8	0.962	49	197				19 42 20.9	50	16		
18 28 06.4	1.039	49	202	18 29 34.8	242	223	19 45 05.0	48	11	2 56.9	86
18 29 04.5	1.039	48	203	18 30 22.6	258	239	19 45 46.8	48	11	2 36.2	86
18 20 52.6	0.964	51	194				19 39 17.5	50	16		
18 29 00.9	1.039	48	203	18 30 29.2	241	222	19 45 45.6	48	11	2 56.6	86
18 29 13.3	1.039	48	203	18 30 43.0	237	217	19 45 55.1	48	11	2 59.4	86
18 29 11.5	1.039	48	204	18 30 11.5	178	158	19 45 57.7	47	9	2 00.1	86
18 25 47.8	0.970	49	198				19 43 04.7	50	15		
18 25 59.9	1.040	50	200	18 26 41.3	290	273	19 43 26.9	48	12	1 22.8	87
18 23 26.8	1.040	51	198	18 24 35.1	269	254	19 41 32.2	48	12	2 16.6	88
18 26 32.3	1.040	50	201	18 28 01.9	211	193	19 43 57.3	47	10	2 59.1	87
18 27 15.7	1.039	49	201	18 28 00.4	287	270	19 44 23.7	48	12	1 29.5	86
18 22 44.8	0.992	51	197				19 40 55.6	48	13		
18 23 58.3	1.040	51	198	18 24 43.3	287	272	19 41 55.0	48	12	1 30.0	87
18 22 12.8	0.999	51	197				19 40 33.4	48	12		
18 25 39.5	1.040	50	200	18 27 12.4	230	212	19 43 16.1	47	10	3 05.7	87
18 31 13.4	0.998	47	206				19 47 28.4	47	8		
18 30 53.8	0.971	46	203				19 46 52.1	51	15		
18 36 43.4	1.038	44	209	18 37 44.1	273	250	19 51 16.7	50	12	2 01.4	84
18 35 33.1	0.978	45	210				19 50 38.3	46	7		
18 34 10.8	0.944	44	204				19 48 58.5	53	18		
18 31 23.3	1.039	47	205	18 32 51.8	237	216	19 47 30.6	48	11	2 56.9	86

LOCAL CIRCUMSTANCES

Geographic Locations	Latitude	Longitude	First Contact Universal Time	P	V	Second Contact Universal Time	P	V
United States (Page 29 *Continued*)	° ′	° ′	h m s	°	°	h m s	°	°
Danville, Va.	+36 35.0	+ 79 20.0	17 12 33.0	224	229			
Dillon, S. C.	+34 25.0	+ 79 35.0	17 08 58.1	226	232	18 27 53.6	2	344
Dunn, N. C.	+35 20.0	+ 78 38.0	17 11 47.0	226	230	18 30 29.2	350	331
Durham, N. C.	+36 00.0	+ 78 54.0	17 12 20.4	225	229			
Elizabeth City, N. C.	+36 16.0	+ 76 11.0	17 16 50.2	227	227	18 34 14.4	68	45
Fayetteville, N. C.	+35 00.0	+ 78 53.0	17 10 54.9	226	231	18 29 31.4	3	344
Goldsboro, N. C.	+35 23.0	+ 78 00.0	17 12 49.9	226	230	18 30 49.8	29	9
Greensboro, N. C.	+36 05.0	+ 79 57.0	17 10 54.5	224	230			
Greenville, N. C.	+35 36.0	+ 77 23.0	17 14 05.3	227	229	18 31 50.8	48	27
Hertford, N. C.	+36 11.0	+ 76 30.0	17 16 14.3	227	227	18 33 39.2	56	34
Jacksonville, N. C.	+34 45.0	+ 77 26.0	17 12 50.4	228	230	18 31 58.7	120	98
Kinston, N. C.	+35 15.0	+ 77 34.0	17 13 19.2	227	229	18 31 17.3	62	41
Lumberton, N. C.	+34 37.0	+ 79 03.0	17 10 05.8	226	231	18 28 35.6	22	3
Lynchburg, Va.	+37 20.0	+ 79 12.0	17 13 49.9	223	227			
Manteo, N. C.	+35 54.0	+ 75 42.0	17 17 06.9	228	227			
Morehead City, N. C.	+34 43.0	+ 76 44.0	17 13 55.0	228	230			
New Bern, N. C.	+35 04.0	+ 77 02.0	17 13 54.6	228	229	18 32 54.8	122	100
Newport News, Va.	+37 08.0	+ 76 30.0	17 17 29.3	226	226	18 35 35.5	332	310
Norfolk, Va.	+36 53.0	+ 76 12.0	17 17 36.7	227	226	18 34 48.3	24	2
Petersburg, Va.	+37 14.0	+ 77 24.0	17 16 17.5	225	226			
Plymouth, N. C.	+35 53.0	+ 76 46.0	17 15 25.6	227	228	18 33 02.1	63	41
Raleigh, N. C.	+35 52.0	+ 78 47.0	17 12 19.4	225	229			
Richmond, Va.	+37 30.0	+ 77 20.0	17 16 44.9	225	226			
Roanoke, Va.	+37 19.0	+ 79 58.0	17 12 43.4	223	228			
Rocky Mount, N. C.	+35 58.0	+ 77 48.0	17 13 57.2	226	229	18 32 11.6	355	334
Suffolk, Va.	+36 44.0	+ 76 37.0	17 16 47.2	226	227	18 34 16.4	11	349
Wallops Island, Va.	+37 56.0	+ 75 28.0	17 20 02.4	226	224			
Washington, D. C.	+38 51.0	+ 77 02.0	17 18 58.7	224	224			
Washington, N. C.	+35 33.0	+ 77 04.0	17 14 30.8	227	229	18 32 21.0	69	48
Wilson, N. C.	+35 43.0	+ 77 56.0	17 13 24.1	226	229	18 31 30.8	8	348
United States (Page 30)								
Albany, N. Y.	+42 39.0	+ 73 45.0	17 27 55.9	223	218			
Allentown, Pa.	+40 39.0	+ 75 26.0	17 23 26.2	224	221			
Asbury Park, N. J.	+40 14.0	+ 74 00.0	17 24 52.6	226	221			
Atlantic City, N. J.	+39 22.0	+ 74 25.0	17 23 17.4	226	222			
Boston, Mass.	+42 21.0	+ 71 04.0	17 31 02.0	226	217			
Bridgeport, Conn.	+41 10.0	+ 73 08.0	17 27 05.6	225	219			
Fall River, Mass.	+41 42.0	+ 71 10.0	17 30 15.9	227	218			
Hartford, Conn.	+41 56.0	+ 72 41.0	17 28 30.7	225	218			
Lawrence, Mass.	+42 43.0	+ 71 10.0	17 31 15.7	226	217			
Lowell, Mass.	+42 38.0	+ 71 19.0	17 30 59.3	226	217			
Monomoy Point, Mass.	+41 33.0	+ 70 00.0	17 31 40.9	228	218	18 46 36.1	338	311
Nantucket, Mass.	+41 15.0	+ 70 04.0	17 31 18.8	228	218	18 45 44.1	12	346
Newark, N. J.	+40 42.0	+ 74 10.0	17 25 11.3	225	220			
New Bedford, Mass.	+41 38.0	+ 70 58.0	17 30 28.0	227	218			
New Britain, Conn.	+41 40.0	+ 72 46.0	17 28 07.1	225	219			
New Haven, Conn.	+41 16.0	+ 72 53.0	17 27 32.2	225	219			
New London, Conn.	+41 21.0	+ 72 06.0	17 28 40.1	226	219			
Newport, R. I.	+41 30.0	+ 71 19.0	17 29 52.0	227	218			
New York, N. Y.	+40 42.0	+ 74 01.0	17 25 23.3	225	220			
Norwalk, Conn.	+41 07.0	+ 73 25.0	17 26 39.7	225	219			
Norwich, Conn.	+41 32.0	+ 72 05.0	17 28 52.8	226	218			
Ocean City, N. J.	+39 16.0	+ 74 35.0	17 22 56.2	226	222			
Philadelphia, Pa.	+39 53.0	+ 75 15.0	17 22 45.1	225	222			

LOCAL CIRCUMSTANCES

Maximum Eclipse				Third Contact			Fourth Contact			Dura-	Width
Universal Time	Magni- tude	Sun's Alt.	Sun's Az.	Universal Time	P	V	Universal Time	P	V	tion	of Path
h m s		°	°	h m s	°	°	h m s	°	°	m s	mi
18 31 33.0	0.962	46	203				19 47 16.0	51	16		
18 28 58.7	1.039	48	202	18 30 03.7	271	252	19 45 41.3	48	12	2 10.1	86
18 31 18.1	1.039	47	204	18 32 07.0	284	264	19 47 22.9	49	12	1 37.8	86
18 31 35.5	0.983	46	204				19 47 27.9	50	14		
18 35 36.4	1.038	45	208	18 36 58.4	207	184	19 50 35.4	48	10	2 44.0	84
18 30 36.3	1.039	47	204	18 31 41.2	271	251	19 46 53.2	49	12	2 09.8	86
18 32 14.9	1.039	46	205	18 33 40.0	245	224	19 48 07.4	48	11	2 50.2	85
18 30 11.3	0.962	47	202				19 46 16.4	51	16		
18 33 19.6	1.039	46	206	18 34 48.3	226	204	19 48 55.9	48	10	2 57.5	85
18 35 05.9	1.039	45	208	18 36 32.5	218	196	19 50 12.8	48	10	2 53.3	84
18 32 24.8	1.039	47	206	18 32 50.9	154	132	19 48 20.2	47	9	0 52.2	85
18 32 43.6	1.039	46	206	18 34 09.8	212	191	19 48 31.0	48	10	2 52.5	85
18 29 57.8	1.039	48	203	18 31 20.1	252	232	19 46 26.6	48	11	2 44.5	86
18 32 26.5	0.948	45	203				19 47 46.6	52	18		
18 35 56.0	0.995	45	209				19 50 52.7	47	8		
18 33 22.1	0.987	46	208				19 49 03.5	46	7		
18 33 17.6	1.039	46	207	18 33 40.5	152	130	19 48 58.4	47	9	0 45.7	85
18 35 56.8	1.038	44	208	18 36 18.1	303	281	19 50 42.1	50	13	0 42.6	84
18 36 08.0	1.038	44	208	18 37 27.7	251	228	19 50 53.8	49	12	2 39.4	84
18 34 49.0	0.982	44	206				19 49 46.7	51	14		
18 34 27.2	1.039	45	207	18 35 52.3	212	190	19 49 45.7	48	10	2 50.2	85
18 31 37.4	0.988	46	204				19 47 31.4	50	14		
18 35 08.4	0.977	44	206				19 49 58.3	51	15		
18 31 21.8	0.935	45	202				19 46 51.4	53	19		
18 33 05.9	1.039	46	206	18 34 00.2	279	259	19 48 41.3	49	12	1 48.6	85
18 35 26.2	1.038	44	208	18 36 35.9	264	242	19 50 22.9	49	12	2 19.5	84
18 37 59.3	0.999	43	209				19 52 07.8	50	13		
18 36 39.6	0.952	43	207				19 50 48.7	53	17		
18 33 43.2	1.039	46	207	18 35 05.4	205	183	19 49 14.5	48	10	2 44.4	85
18 32 40.2	1.039	46	205	18 33 49.6	266	245	19 48 23.9	49	12	2 18.8	85
18 43 13.4	0.918	37	211				19 54 51.6	56	22		
18 40 00.8	0.938	40	209				19 52 57.9	54	19		
18 41 31.1	0.970	40	211				19 54 19.5	53	16		
18 40 25.0	0.984	41	211				19 53 41.5	52	15		
18 46 10.6	0.965	36	215				19 57 20.5	54	17		
18 43 08.7	0.962	38	212				19 55 19.9	53	17		
18 45 44.8	0.979	37	215				19 57 11.9	53	16		
18 44 06.1	0.951	38	213				19 55 50.6	54	18		
18 46 13.8	0.955	36	215				19 57 16.0	54	18		
18 46 01.4	0.955	36	215				19 57 07.9	54	18		
18 47 00.7	1.036	36	217	18 47 25.3	301	275	19 58 11.0	52	14	0 49.2	80
18 46 47.3	1.037	37	217	18 47 50.5	267	239	19 58 05.1	51	13	2 06.4	80
18 41 36.7	0.957	39	211				19 54 15.3	53	18		
18 45 56.6	0.984	37	215				19 57 22.0	53	15		
18 43 51.7	0.956	38	213				19 55 44.5	54	18		
18 43 30.1	0.964	38	213				19 55 34.9	53	17		
18 44 28.5	0.974	38	214				19 56 19.1	53	16		
18 45 28.3	0.982	37	215				19 57 02.6	53	16		
18 41 47.7	0.959	39	211				19 54 24.1	53	17		
18 42 46.5	0.959	39	212				19 55 03.2	54	18		
18 44 35.6	0.970	38	214				19 56 21.5	53	17		
18 40 08.1	0.983	41	210				19 53 29.8	52	15		
18 39 43.4	0.958	41	209				19 52 59.5	53	17		

LOCAL CIRCUMSTANCES

Geographic Locations	Latitude	Longitude	First Contact Universal Time	P	V	Second Contact Universal Time	P	V
	° ′	° ′	h m s	°	°	h m s	°	°
United States (Page 30 *Continued*)								
Pittsfield, Mass.	+42 26.0	+ 73 17.0	17 28 16.8	224	218			
Poughkeepsie, N. Y.	+41 38.0	+ 73 53.0	17 26 37.5	224	219			
Providence, R. I.	+41 44.0	+ 71 26.0	17 29 56.7	226	218			
Salem, Mass.	+42 32.0	+ 70 53.0	17 31 26.8	226	217			
Springfield, Mass.	+42 06.0	+ 72 36.0	17 28 47.8	225	218			
Stamford, Conn.	+41 03.0	+ 73 33.0	17 26 24.6	225	220			
Trenton, N. J.	+40 13.0	+ 74 46.0	17 23 48.7	225	221			
Troy, N. Y.	+42 43.0	+ 73 43.0	17 28 02.8	223	218			
Waterbury, Conn.	+41 33.0	+ 73 02.0	17 27 38.6	225	219			
Worcester, Mass.	+42 16.0	+ 71 52.0	17 29 55.0	225	218			
United States-Canada (Page 31)								
Bar Harbor, Me.	+44 20.0	+ 68 14.0	17 36 21.4	226	214			
Bridgewater, N. S.	+44 23.0	+ 64 32.0	17 40 54.4	230	213	18 52 52.7	9	340
Caledonia, N. S.	+44 24.0	+ 65 02.0	17 40 18.3	229	213			
Chester, N. S.	+44 33.0	+ 64 16.0	17 41 20.0	230	213	18 53 13.9	5	336
Dartmouth, N. S.	+44 40.0	+ 63 35.0	17 42 13.9	230	213	18 53 38.8	28	359
Digby, N. S.	+44 37.0	+ 65 47.0	17 39 32.3	228	213			
Halifax, N. S.	+44 38.0	+ 63 35.0	17 42 12.7	230	213	18 53 37.0	31	2
Liverpool, N. S.	+44 03.0	+ 64 43.0	17 40 28.3	230	214	18 52 22.0	32	3
Machias, Me.	+44 44.0	+ 67 28.0	17 37 35.8	227	214			
Shelburne, N. S.	+43 47.0	+ 65 20.0	17 39 31.8	230	214	18 51 42.8	28	358
Yarmouth, N. S.	+43 50.0	+ 66 08.0	17 38 33.8	229	214			
Canada (Page 32)								
Amherst, N. S.	+45 50.0	+ 64 14.0	17 42 08.8	228	212			
Baddeck, N. S.	+46 06.0	+ 60 45.0	17 46 15.8	231	211	18 56 32.5	19	348
Canso, N. S.	+45 20.0	+ 61 00.0	17 45 38.7	231	212	18 56 11.7	79	48
Charlottetown, P. E. I.	+46 14.0	+ 63 09.0	17 43 36.6	229	212			
Corner Brook, Nfd.	+48 58.0	+ 57 58.0	17 50 14.4	229	209			
Gaspé, Que.	+48 50.0	+ 64 30.0	17 43 39.2	224	210			
Glace Bay, N. S.	+46 11.0	+ 59 58.0	17 47 10.9	231	211	18 57 03.2	44	13
Grand Falls, Nfd.	+48 57.0	+ 55 40.0	17 52 29.3	231	209			
Louisburg, N. S.	+45 56.0	+ 59 58.0	17 47 05.2	231	211	18 57 03.9	66	35
Moncton, N. B.	+46 04.0	+ 64 50.0	17 41 36.2	227	212			
New Glasgow, N. S.	+45 36.0	+ 62 38.0	17 43 51.9	230	212			
Port aux Basques, Nfd.	+47 35.0	+ 59 10.0	17 48 34.2	230	210			9
Port Hawkesbury, N. S.	+45 36.0	+ 61 22.0	17 45 20.2	231	212	18 55 47.2	40	14
St. Alban's, Nfd.	+47 51.0	+ 55 50.0	17 52 06.6	232	209	19 00 20.2	46	23
St. Peter's, N. S.	+45 40.0	+ 60 53.0	17 45 55.6	231	212	18 56 12.1	53	
Stephenville, Nfd.	+48 33.0	+ 58 34.0	17 49 30.8	229	209			6
Sydney, N. S.	+46 10.0	+ 60 10.0	17 46 57.0	231	211	18 56 54.2	37	338
Upper Musquodoboit, N. S.	+45 10.0	+ 62 58.0	17 43 14.7	230	212	18 54 33.2	8	
Canada (Page 33)								
Argentia, Nfd.	+47 18.0	+ 54 00.0	17 53 54.8	234	210			33
Bonavista, Nfd.	+48 38.0	+ 53 08.0	17 54 54.1	233	209	19 02 10.8	66	
Gander, Nfd.	+48 58.0	+ 54 34.0	17 53 33.4	232	209			34
Lethbridge, Nfd.	+48 21.0	+ 53 55.0	17 54 06.7	233	209	19 01 41.2	66	
St. John's, Nfd.	+47 34.0	+ 52 41.0	17 55 16.7	235	209			78
Terrenceville, Nfd.	+47 41.0	+ 54 44.0	17 53 12.5	233	209	19 01 40.0	111	314
Wesleyville, Nfd.	+49 08.0	+ 53 36.0	17 54 30.0	232	208	19 02 22.5	346	
Canada								
Calgary, Alta.	+51 05.0	+114 05.0	17 13 10.0	183	209			
Fredericton, N. B.	+45 57.0	+ 66 40.0	17 39 26.2	226	212			
Montreal, Que.	+45 30.0	+ 73 35.0	17 31 13.0	221	215			
Ottawa, Ont.	+45 24.0	+ 75 43.0	17 28 45.1	219	215			
Québec, Que.	+46 50.0	+ 71 15.0	17 35 05.6	221	213			
Regina, Sask.	+50 30.0	+104 38.0	17 15 02.7	191	211			

LOCAL CIRCUMSTANCES

Maximum Eclipse Universal Time	Magnitude	Sun's Alt.	Sun's Az.	Third Contact Universal Time	Third Contact P	Third Contact V	Fourth Contact Universal Time	Fourth Contact P	Fourth Contact V	Duration	Width of Path
h m s		°	°	h m s	°	°	h m s	°	°	m s	*mi*
18 43 39.5	0.930	37	212				19 55 18.3	55	20		
18 42 30.8	0.940	38	211				19 54 40.0	55	19		
18 45 27.3	0.975	37	215				19 56 58.0	53	16		
18 46 28.1	0.964	36	215				19 57 30.6	54	18		
18 44 17.1	0.948	37	213				19 55 56.0	54	19		
18 42 34.5	0.958	39	212				19 54 54.9	54	18		
18 40 33.4	0.958	40	210				19 53 33.6	53	17		
18 43 17.8	0.917	37	211				19 54 53.6	56	22		
18 43 28.9	0.955	38	212				19 55 28.6	54	18		
18 45 13.2	0.955	37	214				19 56 37.3	54	18		
18 50 01.4	0.957	33	218				19 59 39.8	55	19		
18 53 46.8	1.035	31	223	18 54 40.9	273	244	20 02 21.9	53	15	1 48.2	77
18 53 17.5	0.998	31	222				20 02 01.4	53	16		
18 54 04.4	1.035	31	223	18 54 55.0	277	248	20 02 31.7	53	15	1 41.1	77
18 54 45.2	1.035	30	224	18 55 51.7	254	224	20 02 57.9	53	15	2 12.9	77
18 52 35.8	0.983	31	221				20 01 28.5	54	17		
18 54 44.9	1.035	30	224	18 55 52.7	251	221	20 02 58.1	53	15	2 15.7	77
18 53 31.6	1.035	31	223	18 54 41.1	250	220	20 02 16.0	53	14	2 19.1	77
18 50 55.7	0.958	32	219				20 00 12.8	55	19		
18 52 50.7	1.035	32	222	18 53 58.6	254	225	20 01 51.3	53	14	2 15.8	78
18 52 02.8	0.998	32	221				20 01 17.2	53	15		
18 54 19.1	0.972	30	223				20 02 21.1	55	18		
18 57 30.2	1.034	27	227	18 58 27.8	266	235	20 04 27.4	54	16	1 55.3	75
18 57 13.9	1.034	28	227	18 58 16.1	205	173	20 04 27.2	53	14	2 04.4	75
18 55 22.1	0.975	29	224				20 02 58.3	55	18		
18 59 38.6	0.962	24	229				20 05 00.5	57	21		
18 54 16.9	0.893	27	222				20 01 10.0	60	26		
18 58 11.1	1.034	27	228	18 59 19.0	241	209	20 04 52.7	54	15	2 15.8	75
19 01 21.4	0.986	22	232				20 06 07.1	56	19		
18 58 10.6	1.034	27	228	18 59 17.3	218	187	20 04 55.8	53	15	2 13.4	75
18 53 47.0	0.959	30	222				20 01 53.5	56	20		
18 55 46.6	0.998	29	225				20 03 25.9	54	16		
18 58 49.9	0.986	25	228				20 04 55.3	56	18		
18 56 55.6	1.034	28	227	18 58 04.0	244	213	20 04 11.9	53	15	2 16.8	75
19 01 24.5	1.033	23	232	19 02 28.9	240	208	20 06 28.2	55	16	2 08.7	73
18 57 21.7	1.034	28	227	18 58 31.3	231	200	20 04 28.0	53	15	2 19.2	75
18 59 13.8	0.967	24	229				20 04 52.7	57	20		
18 58 00.7	1.034	27	228	18 59 07.2	247	216	20 04 46.2	54	15	2 13.0	75
18 55 24.9	1.034	29	225	18 56 16.6	275	245	20 03 17.7	54	15	1 43.4	76
19 02 50.1	0.984	22	234				20 07 25.3	53	14		
19 03 12.1	1.032	21	235	19 04 13.4	222	189	20 07 18.5	55	17	2 02.6	71
19 02 08.3	0.996	22	233				20 06 35.5	56	19		
19 02 43.0	1.032	22	234	19 03 44.8	221	188	20 07 06.5	55	16	2 03.6	72
19 03 43.4	0.978	21	235				20 07 51.0	53	14		
19 02 14.7	1.033	22	233	19 02 49.4	176	143	20 07 00.2	54	15	1 09.4	72
19 02 46.3	1.032	21	234	19 03 10.0	302	269	20 06 55.0	56	18	0 47.5	72
17 58 42.4	0.227	29	149				18 45 06.8	104	115		
18 52 00.0	0.938	31	220				20 00 36.0	57	21		
18 44 40.6	0.855	35	211				19 54 45.1	60	28		
18 42 15.2	0.827	36	207				19 52 36.2	62	31		
18 47 34.7	0.857	33	213				19 56 35.6	61	28		
18 10 00.7	0.340	33	162				19 05 28.6	93	94		

LOCAL CIRCUMSTANCES

Geographic Locations	Latitude	Longitude	First Contact Universal Time	P	V	Second Contact Universal Time	P	V
	° ′	° ′	h m s	°	°	h m s	°	°
Canada								
St. John, N. B.	+45 16.0	+ 66 03.0	17 39 40.0	227	213			
Toronto, Ont.	+43 42.0	+ 79 25.0	17 22 30.6	217	218			
Victoria, B. C.	+48 26.0	+123 20.0	17 05 14.6	178	211			
Winnipeg, Man.	+49 53.0	+ 97 10.0	17 17 35.8	197	213			
Central America								
Acapulco, Mex.	+16 51.0	+ 99 56.0	16 03 54.0	223	284			
Belize, Br. Hond.	+17 29.0	+ 88 10.0	16 24 42.9	233	280			
Guadalajara, Mex.	+20 30.0	+103 20.0	16 07 28.1	217	275			
La Paz, Mex.	+24 10.0	+110 17.0	16 08 58.9	208	265			
Managua, Nic.	+12 06.0	+ 86 18.0	16 19 49.9	242	296			
Mazatlán, Mex.	+23 11.0	+106 25.0	16 10 17.4	212	268			
Mexicali, Mex.	+32 36.0	+115 30.0	16 26 37.9	197	245			
Mexico, Mex.	+19 25.0	+ 99 10.0	16 10 21.4	221	278			
Monterrey, Mex.	+25 40.0	+100 20.0	16 22 45.7	214	262			
Panamá, Panama	+ 8 57.0	+ 79 30.0	16 34 03.5	255	299			
San José, Costa Rica	+ 9 59.0	+ 84 04.0	16 22 19.3	247	301			
San Luis Potosí, Mex.	+22 10.0	+101 00.0	16 14 01.2	217	271			
San Salvador, El Salvador	+13 40.0	+ 89 10.0	16 16 05.5	237	292			
Tampico, Mex.	+22 18.0	+ 97 52.0	16 18 21.4	219	270			
Tegucigalpa, Hond.	+14 05.0	+ 87 14.0	16 20 51.2	238	290			
Tonantzintla, Mex.	+19 02.0	+ 98 18.8	16 10 43.3	222	279			
Islands								
Arecibo, Puerto Rico	+18 20.8	+ 66 45.2	17 21 37.4	262	237			
Godthaab, Greenland	+64 10.0	+ 51 40.0	17 56 55.2	214	199			
Guantánamo, Cuba	+20 09.0	+ 75 14.0	16 58 22.3	246	254			
Kingston, Jamaica	+17 58.0	+ 76 48.0	16 51 43.3	247	263			
Reykjavik, Iceland	+64 08.4	+ 21 55.8	18 06 12.5	224	201			
South America								
Bogotá, Colombia	+ 4 35.9	+ 74 04.9	16 51 31.1	271	293			
Caracas, Venezuela	+10 30.4	+ 66 55.7	17 21 41.1	275	241			
Quito, Ecuador	- 0 14.0	+ 78 29.6	16 32 56.9	271	340			
United States								
Albuquérque, N. M.	+35 03.0	+106 37.0	16 39 01.6	200	240			
Atlanta, Ga.	+33 39.0	+ 84 25.0	17 00 25.9	221	237			
Augusta, Me.	+44 20.0	+ 69 48.0	17 34 27.7	225	215			
Austin, Tex.	+30 18.0	+ 97 42.0	16 36 20.0	212	250			
Baltimore, Md.	+39 11.0	+ 76 40.0	17 19 55.4	224	223			
Bangor, Me.	+44 49.0	+ 68 47.0	17 36 05.6	225	214			
Biloxi, Miss.	+30 24.0	+ 88 55.0	16 47 53.7	220	247			
Bismarck, N. D.	+46 46.0	+100 45.0	17 09 29.5	196	217			
Boise, Idaho	+43 34.0	+116 13.0	16 54 49.9	186	222			
Casper, Wyo.	+42 55.0	+106 28.0	16 57 50.0	194	224			
Chattanooga, Tenn.	+35 02.0	+ 85 12.0	17 01 43.9	219	235			
Chicago, Ill.	+41 43.0	+ 87 38.0	17 10 31.4	211	224			
Columbus, Ohio	+40 00.0	+ 82 53.0	17 13 01.3	217	225			
Concord, N. H.	+43 12.0	+ 71 30.0	17 31 19.0	225	216			
Dallas, Tex.	+32 51.0	+ 96 51.0	16 42 56.8	210	244			
Denver, Colo.	+39 45.0	+105 00.0	16 51 27.6	198	230			
Des Moines, Iowa	+41 35.0	+ 93 37.0	17 04 26.9	206	226			
Detroit, Mich.	+42 13.0	+ 83 21.0	17 15 57.4	215	222			
Flagstaff, Ariz.	+35 08.0	+111 40.0	16 35 41.6	197	240			
Fort Myers, Fla.	+26 35.0	+ 81 52.0	16 52 43.0	231	250			
Helena, Mont.	+46 36.0	+112 00.0	17 03 44.1	187	217			
Houston, Tex.	+29 46.0	+ 95 22.0	16 37 56.2	214	251			
Indianapolis, Ind.	+39 44.0	+ 86 16.0	17 08 34.7	214	227			
Jackson, Miss.	+32 20.0	+ 90 13.0	16 49 53.5	217	243			
Juneau, Alaska	+58 22.0	+134 35.0	17 29 11.9	164	191			

LOCAL CIRCUMSTANCES

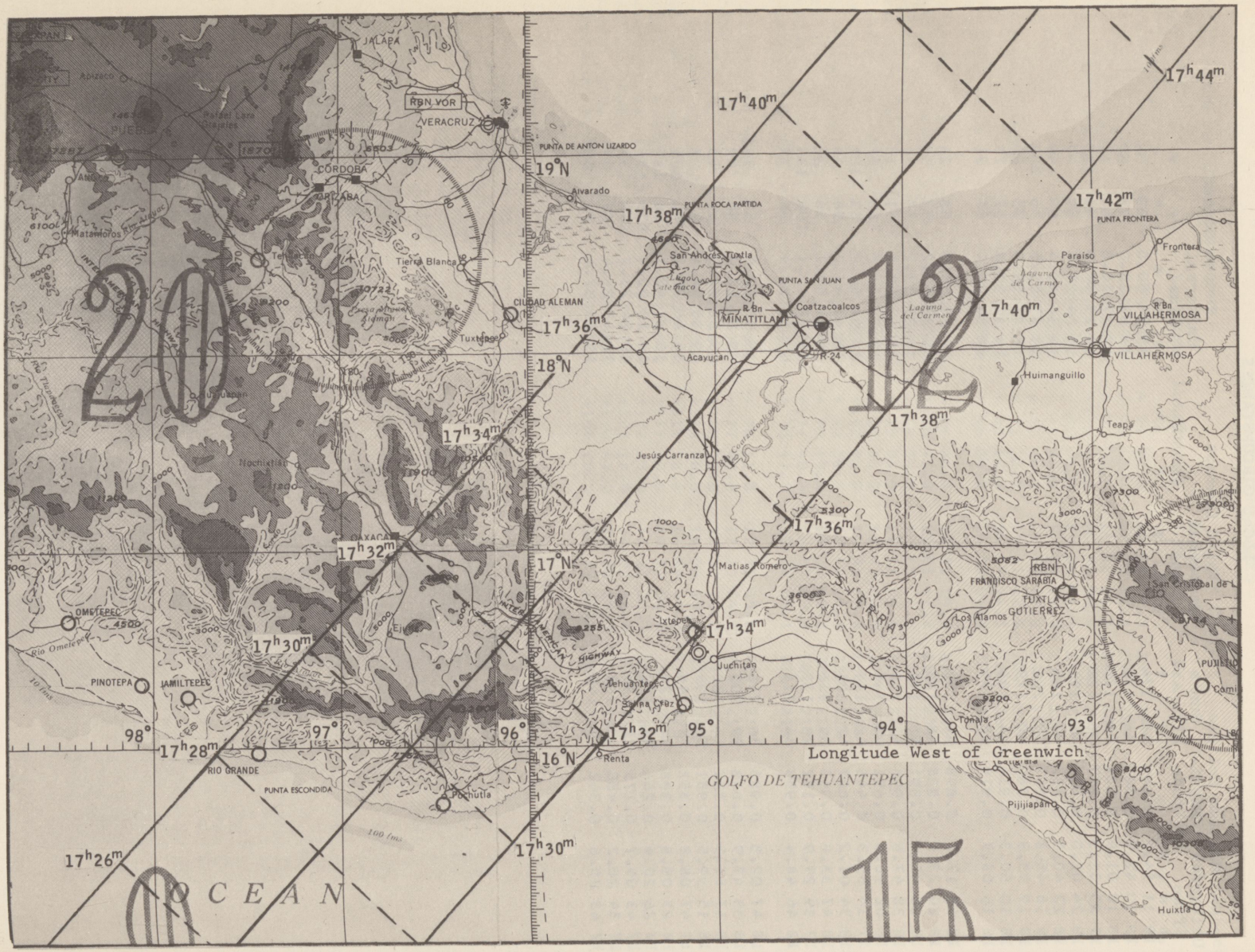
Maximum Eclipse				Third Contact			Fourth Contact			Duration	Width of Path
Universal Time	Magnitude	Sun's Alt.	Sun's Az.	Universal Time	P	V	Universal Time	P	V		
h m s		°	°	h m s	°	°	h m s	°	°	m s	*mi*
18 52 28.4	0.963	31	221				20 01 11.4	55	19		
18 37 00.2	0.808	39	202				19 48 39.9	62	33		
17 43 23.2	0.158	26	134				18 22 32.9	111	134		
18 18 56.8	0.442	35	174				19 20 08.5	85	77		
17 25 35.3	0.936	60	135				18 50 54.8	49	49		
17 48 22.9	0.862	67	170				19 11 56.5	34	358		
17 26 27.8	0.800	55	134				18 49 23.4	57	65		
17 20 52.9	0.616	47	128				18 37 24.2	70	94		
17 41 03.0	0.707	72	167				19 02 24.0	24	341		
17 25 58.4	0.697	51	133				18 45 47.8	64	79		
17 27 38.1	0.410	39	131				18 32 00.4	86	112		
17 32 03.0	0.901	59	141				18 56 42.5	51	46		
17 41 40.7	0.764	55	148				19 02 50.8	60	55		
17 46 58.7	0.474	75	198				18 58 54.1	10	312		
17 40 46.5	0.608	75	174				18 59 04.2	18	328		
17 33 57.5	0.814	56	142				18 56 54.5	56	55		
17 39 00.4	0.807	70	159				19 02 40.0	30	354		
17 39 57.0	0.874	59	149				19 03 38.9	52	42		
17 43 21.8	0.770	70	168				19 05 59.1	28	348		
17 32 52.6	0.926	60	142				18 57 48.4	49	41		
18 27 20.9	0.395	54	231				19 29 34.2	9	309		
18 55 47.1	0.634	12	231				19 52 35.6	79	56		
18 15 58.7	0.622	60	213				19 30 17.8	22	330		
18 09 27.8	0.608	64	210				19 24 25.4	20	328		
.. ..	. ...	..	...				.. ..	...	...		
17 47 56.5	0.245	76	226				18 43 25.1	353	285		
18 13 16.9	0.209	62	237				19 03 03.4	352	286		
17 29 34.5	0.249	85	193				18 26 09.5	353	280		
17 46 44.3	0.504	44	147				18 56 32.9	78	85		
18 20 53.0	0.930	50	193				19 38 57.7	52	20		
18 48 22.1	0.936	34	216				19 58 22.9	56	21		
17 54 19.6	0.735	53	160				19 13 16.6	62	50		
18 37 23.9	0.951	42	207				19 51 18.7	53	18		
18 49 35.6	0.938	33	217				19 59 09.7	56	21		
18 09 20.0	0.906	54	181				19 29 31.6	52	24		
18 11 22.9	0.434	37	167				19 13 34.7	85	81		
17 45 10.0	0.271	33	140				18 37 07.4	99	117		
17 58 36.4	0.402	39	155				19 00 32.5	87	91		
18 21 20.9	0.887	49	191				19 38 45.0	54	24		
18 24 45.5	0.715	43	188				19 37 21.4	66	43		
18 29 46.4	0.828	44	196				19 43 59.5	59	30		
18 46 04.1	0.939	36	214				19 56 58.3	55	20		
17 59 46.6	0.707	51	165				19 17 06.1	64	51		
17 56 31.3	0.464	42	155				19 02 53.2	82	84		
18 16 07.3	0.619	43	177				19 27 12.2	71	56		
18 30 58.2	0.776	42	196				19 43 38.6	63	36		
17 38 27.4	0.427	41	139				18 43 52.3	84	101		
18 15 13.1	0.910	57	197				19 35 02.8	39	359		
17 55 34.2	0.290	33	149				18 48 35.2	97	108		
17 57 29.5	0.789	54	165				19 17 28.7	58	42		
18 24 49.1	0.776	45	190				19 39 07.1	62	36		
18 09 59.3	0.843	53	179				19 29 03.0	56	31		
17 47 59.9	0.041	15	128				18 06 56.7	131	154		

LOCAL CIRCUMSTANCES

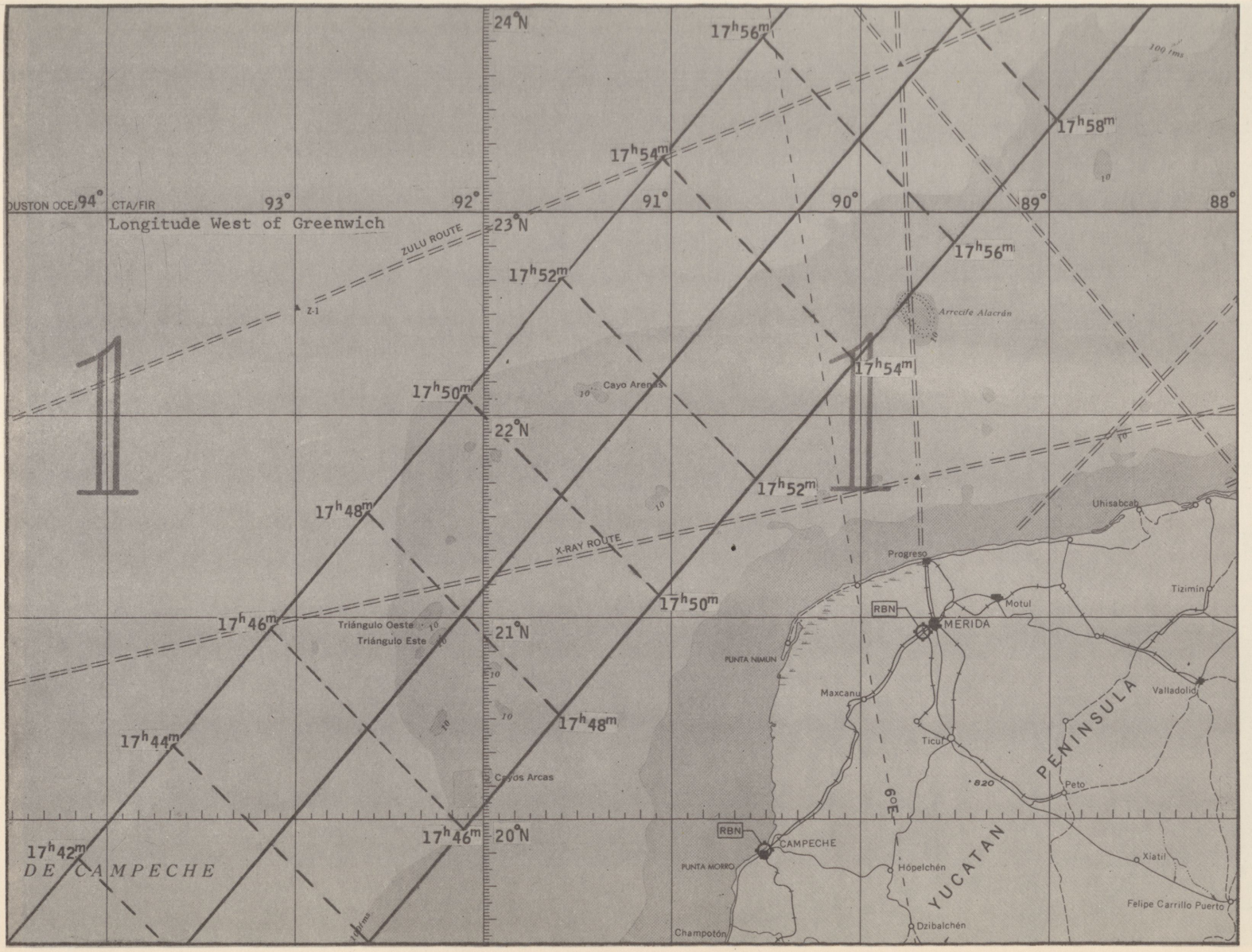
Geographic Locations	Latitude	Longitude	First Contact Universal Time	P	V	Second Contact Universal Time	P	V
United States	° ′	° ′	h m s	°	°	h m s	°	°
Kansas City, Mo.	+39 07.0	+ 94 35.0	16 58 37.0	207	231			
Lincoln, Neb.	+40 49.0	+ 96 42.0	17 00 11.3	204	228			
Little Rock, Ark.	+34 44.0	+ 92 14.0	16 52 11.3	213	239			
Los Angeles, Calif.	+34 03.0	+118 14.0	16 28 54.4	194	242			
Louisville, Ky.	+38 11.0	+ 85 44.0	17 06 31.9	216	229			
Madison, Wis.	+43 08.0	+ 89 20.0	17 11 19.0	209	222			
Miami, Fla.	+25 47.0	+ 80 11.0	16 54 42.8	234	250			
Minneapolis, Minn.	+44 59.0	+ 93 18.0	17 11 12.5	204	220			
Mobile, Ala.	+30 41.0	+ 88 15.0	16 49 24.5	220	246			
Montgomery, Ala.	+32 18.0	+ 86 24.0	16 55 08.0	221	241			
Montpelier, Vt.	+44 16.0	+ 72 36.0	17 31 03.4	223	216			
Nashville, Tenn.	+36 07.0	+ 86 41.0	17 01 41.2	217	234			
New Orleans, La.	+29 57.0	+ 90 04.0	16 45 21.8	219	248			
Ocean City, Md.	+38 21.0	+ 75 06.0	17 21 05.4	226	224			
Oklahoma City, Okla.	+35 24.0	+ 97 36.0	16 47 46.3	207	239			
Phoenix, Ariz.	+33 26.0	+112 01.0	16 31 04.4	198	243			
Pittsburgh, Pa.	+40 27.0	+ 80 00.0	17 17 16.3	220	223			
Portland, Me.	+43 39.0	+ 70 19.0	17 33 12.8	225	216			
Portland, Ore.	+45 32.0	+122 40.0	16 57 57.5	181	217			
Portsmouth, N. H.	+43 03.0	+ 70 47.0	17 32 04.1	226	216			
Provincetown, Mass.	+42 04.0	+ 70 11.0	17 31 55.0	227	217			
Rochester, N. Y.	+43 07.0	+ 77 40.0	17 23 44.5	219	219			
St. Louis, Mo.	+38 38.0	+ 90 12.0	17 02 10.3	212	230			
St. Petersburg, Fla.	+27 45.0	+ 82 40.0	16 53 10.5	229	248			
Salt Lake City, Utah	+40 46.0	+111 58.0	16 49 44.3	192	228			
San Diego, Calif.	+32 44.0	+117 10.0	16 25 58.5	195	245			
San Francisco, Calif.	+37 47.0	+122 25.0	16 37 06.7	188	233			
Seattle, Wash.	+47 27.0	+122 18.0	17 02 56.4	179	213			
Tucson, Ariz.	+32 08.0	+110 57.0	16 28 29.7	200	246			
Whitesands, N. M.	+32 45.0	+106 20.0	16 33 37.5	203	245			

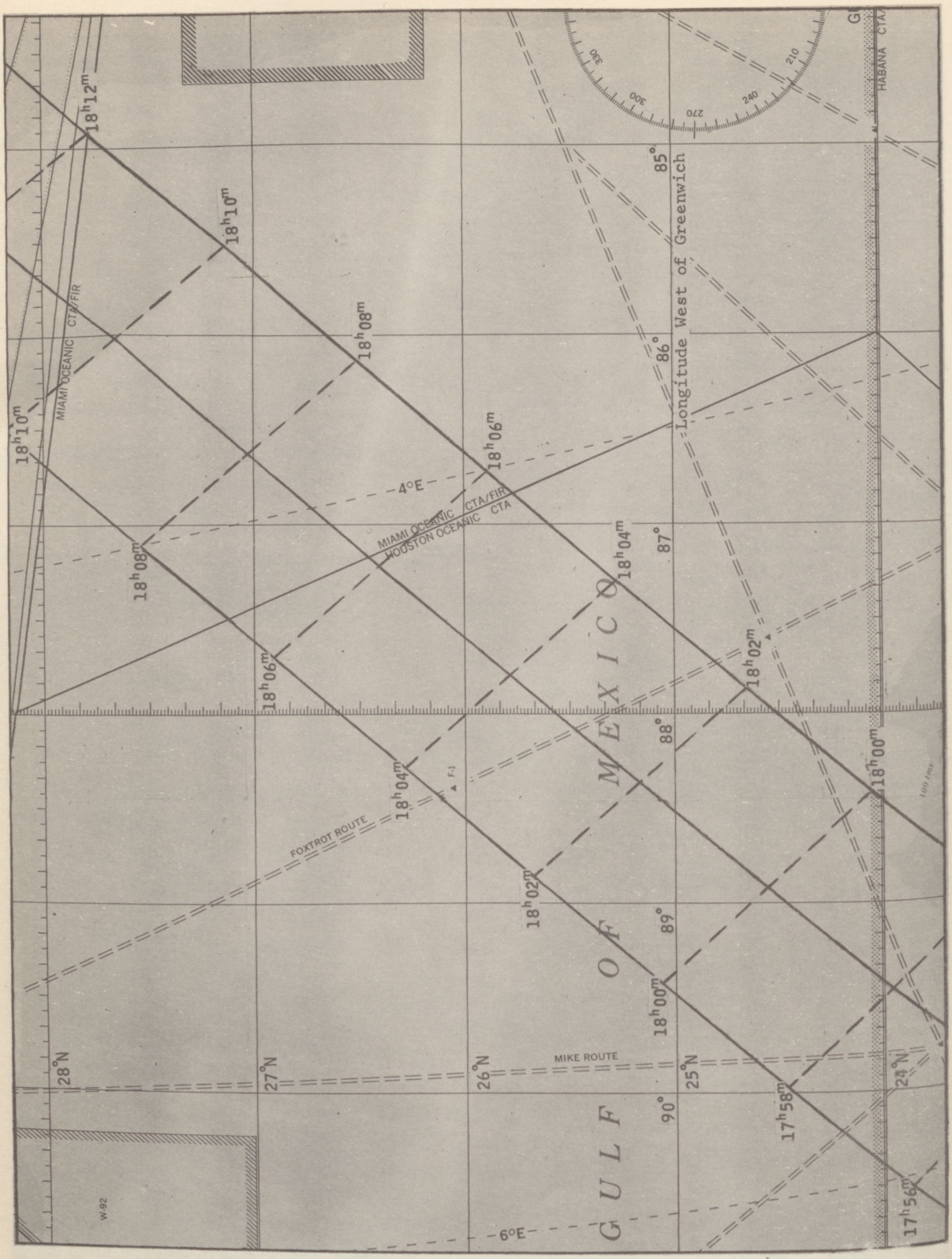
LOCAL CIRCUMSTANCES

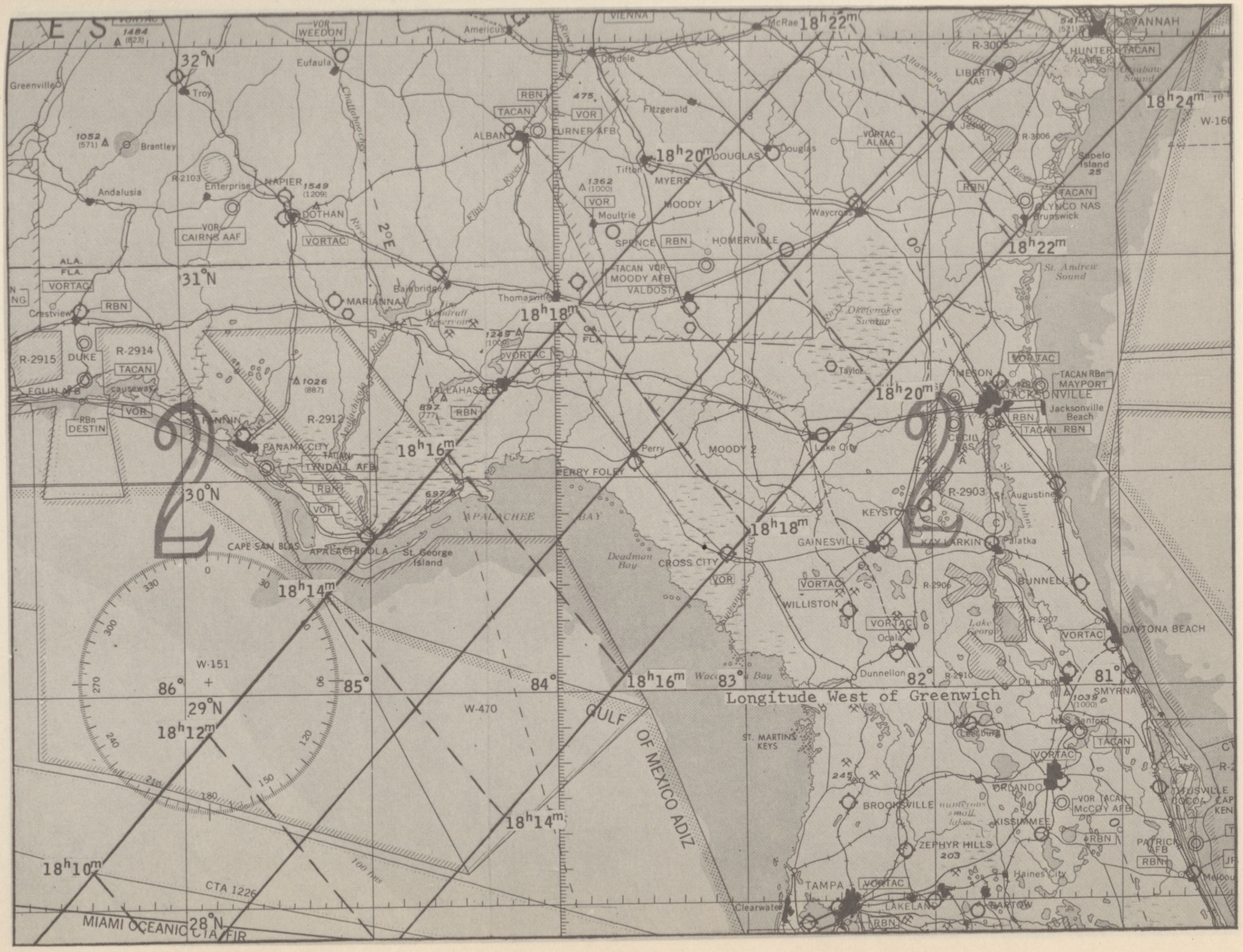
Maximum Eclipse: Universal Time	Magnitude	Sun's Alt.	Sun's Az.	Third Contact: Universal Time	P	V	Fourth Contact: Universal Time	P	V	Duration	Width of Path
h m s		°	°	h m s	°	°	h m s	°	°	m s	*mi*
18 11 54.2	0.643	46	174				19 24 50.0	69	54		
18 10 42.3	0.580	44	171				19 21 11.0	74	62		
18 10 01.9	0.761	50	176				19 27 11.8	61	41		
17 25 52.3	0.357	36	129				18 25 59.9	91	120		
18 24 02.0	0.815	46	191				19 39 27.6	59	32		
18 23 40.5	0.662	42	185				19 34 43.4	69	49		
18 16 45.8	0.857	57	201				19 35 50.5	36	353		
18 19 53.3	0.569	40	179				19 27 55.1	75	61		
18 10 50.3	0.914	54	183				19 30 50.8	52	23		
18 16 03.7	0.919	52	188				19 35 04.4	52	21		
18 45 17.2	0.898	35	212				19 55 53.5	58	24		
18 20 22.4	0.838	48	188				19 37 09.2	57	30		
18 06 45.4	0.891	55	178				19 27 13.2	53	26		
18 38 47.6	0.996	42	210				19 52 40.1	51	13		
18 02 16.3	0.651	48	165				19 17 13.0	68	57		
17 34 55.3	0.446	42	137				18 41 44.9	83	101		
18 34 01.2	0.867	42	201				19 47 47.2	58	26		
18 47 33.8	0.945	35	216				19 57 59.7	55	20		
17 39 29.9	0.187	28	133				18 22 22.1	108	133		
18 46 48.4	0.953	36	215				19 57 36.4	55	19		
18 47 02.8	0.985	36	216				19 58 05.0	53	16		
18 38 47.9	0.848	39	205				19 50 43.9	60	28		
18 17 57.5	0.727	46	182				19 32 32.8	64	43		
18 15 39.5	0.951	56	195				19 35 34.4	42	3		
17 47 08.8	0.352	37	144				18 46 23.0	91	104		
17 25 09.8	0.388	37	129				18 27 45.1	88	117		
17 26 20.6	0.266	31	127				18 18 00.4	100	131		
17 43 05.7	0.175	27	135				18 24 23.2	109	132		
17 34 26.2	0.480	43	137				18 43 29.6	80	97		
17 43 25.6	0.542	46	145				18 55 37.6	75	82		

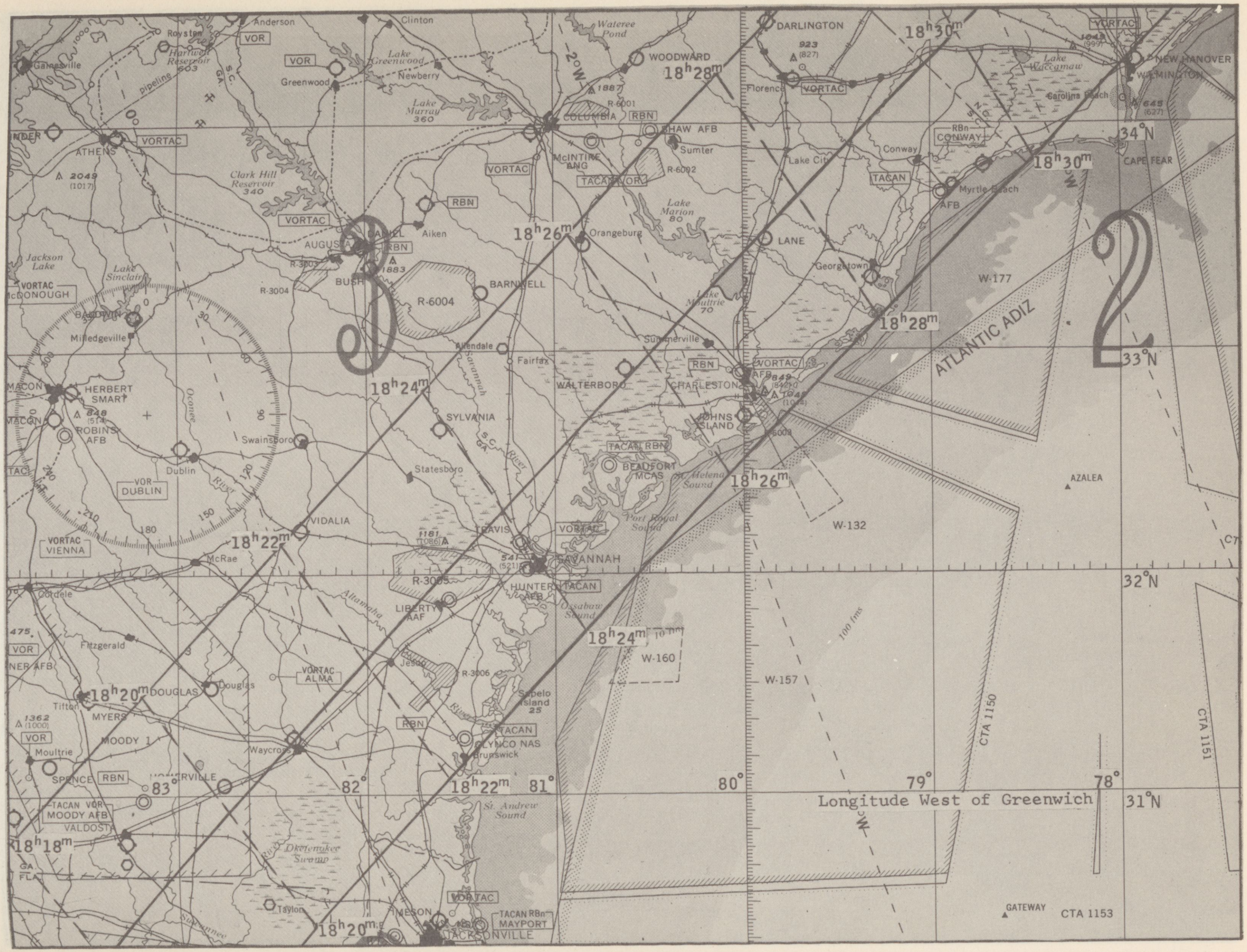


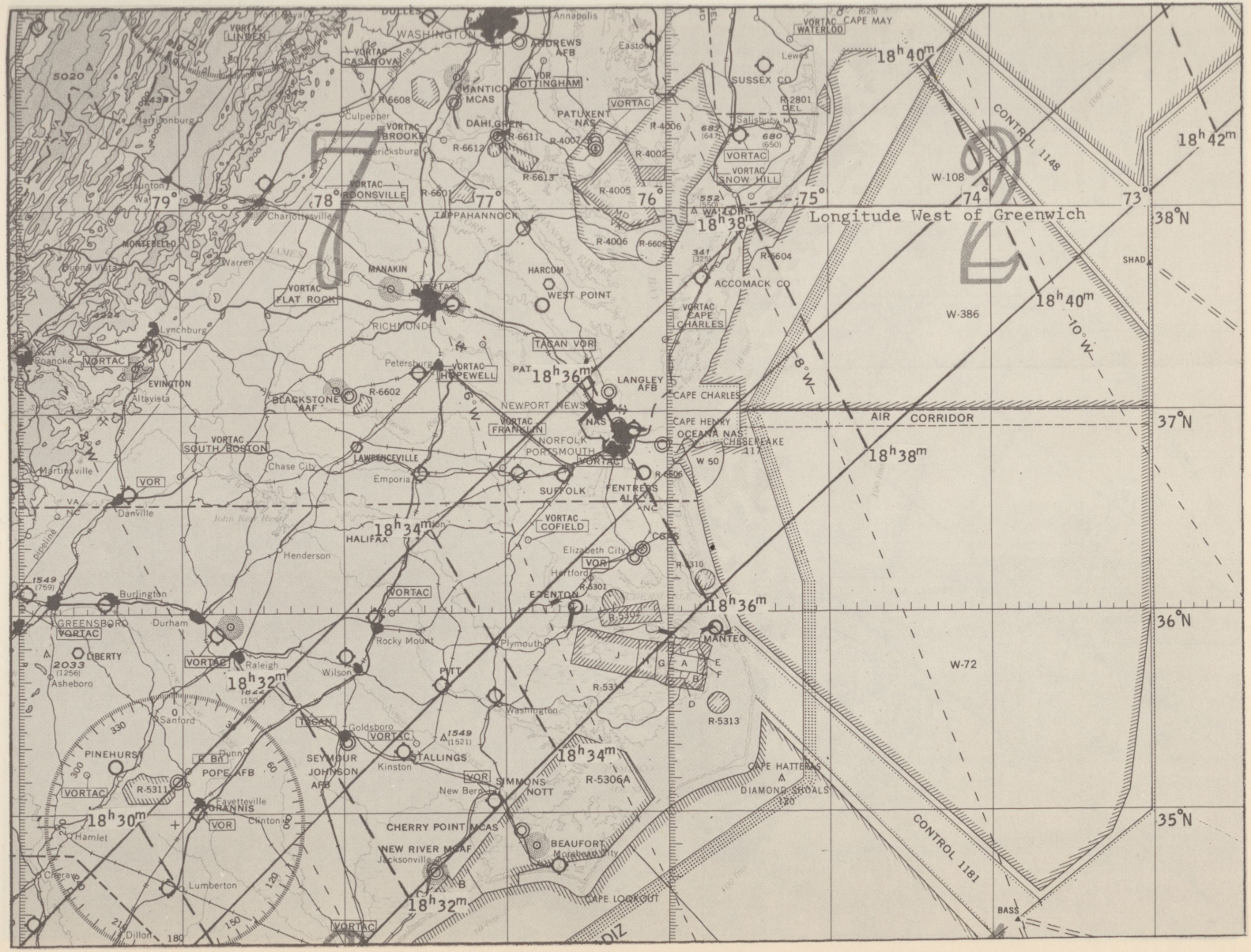
JALAPA
RBN VOR
VERACRUZ
PUNTA DE ANTON LIZARDO
CORDOBA
ORIZABA
Matamoros
Tehuacan
Tierra Blanca
CIUDAD ALEMAN
Tuxtepec
Nochixtlan
OAXACA
OMETEPEC
Rio Ometepec
PINOTEPA
JAMILTEPEC
RIO GRANDE
PUNTA ESCONDIDA
Pochutla
Renta
Tehuantepec
Salina Cruz
Juchitan
Ixtepec
Matias Romero
Jesús Carranza
Acayucan
MINATITLAN
Coatzacoalcos
R-24
PUNTA SAN JUAN
San Andrés Tuxtla
PUNTA ROCA PARTIDA
Alvarado
Laguna del Carmen
Paraiso
PUNTA FRONTERA
Frontera
VILLAHERMOSA
Huimanguillo
Teapa
FRANCISCO SARABIA
FUXTLA
GUTIERREZ
Los Alamos
Tonala
Pijijiapan
Huixtla
GOLFO DE TEHUANTEPEC
OCEAN
Longitude West of Greenwich
17h26m
17h28m
17h30m
17h32m
17h34m
17h36m
17h38m
17h40m
17h42m
17h44m
98°
97°
96°
95°
94°
93°
19°N
18°N
17°N
16°N
20
12
15

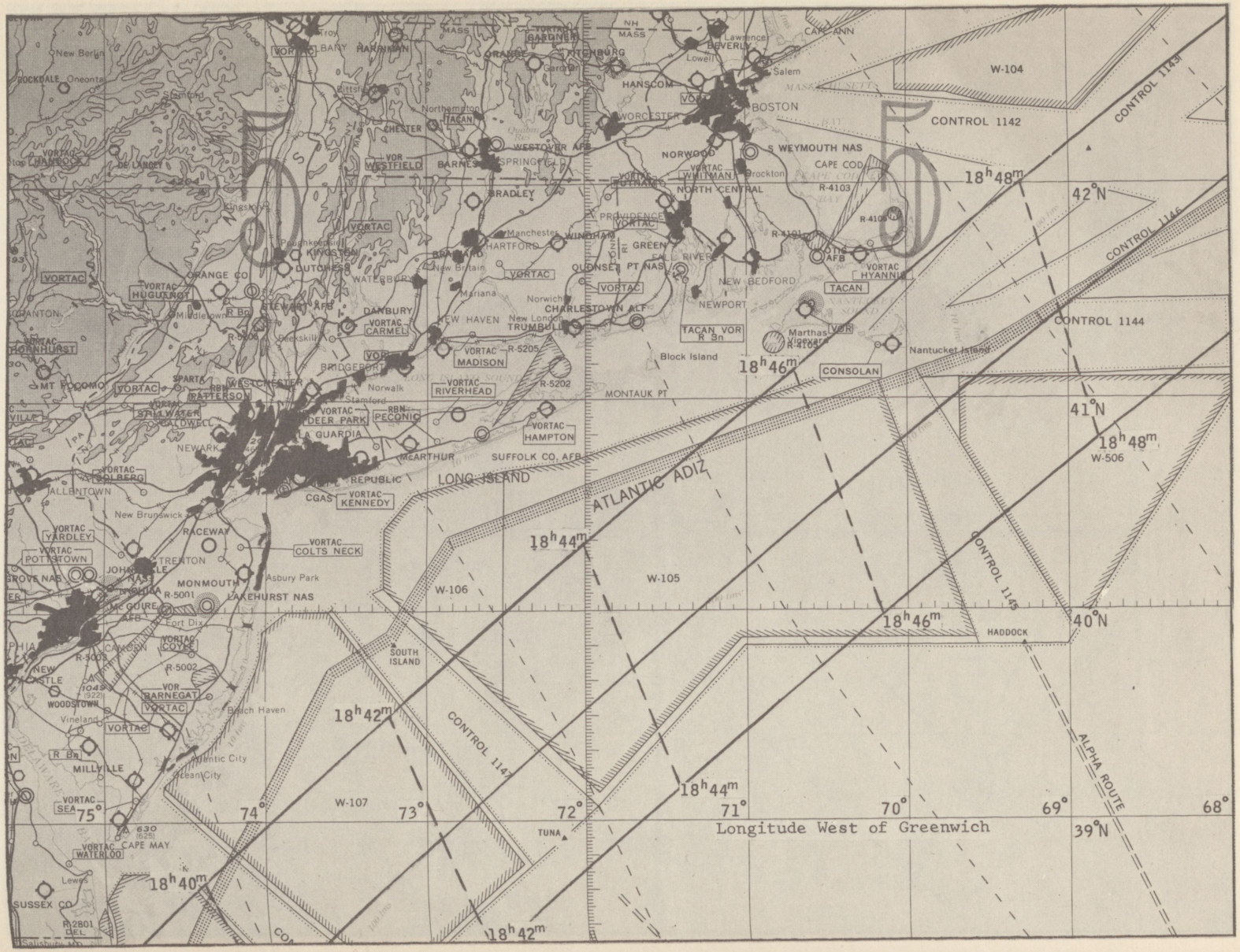

Longitude West of Greenwich
94°
93°
92°
91°
90°
89°
88°
24°N
23°N
22°N
21°N
20°N
17h56m
17h54m
17h52m
17h50m
17h48m
17h46m
17h44m
17h42m
ZULU ROUTE
X-RAY ROUTE
Z-1
Arrecife Alacrán
Cayo Arenas
Triángulo Oeste
Triángulo Este
Cayos Arcas
DE CAMPECHE
PUNTA NIMUN
PUNTA MORRO
CAMPECHE
RBN
MÉRIDA
Progreso
Uhisabcah
Tizimín
Motul
Maxcanú
Ticul
Peto
Valladolid
Hópelchén
Dzibalchén
Champotón
Xiatil
Felipe Carrillo Puerto
PENINSULA
YUCATAN
609
820


Longitude West of Greenwich
85°
86°
87°
88°
89°
90°
28°N
27°N
26°N
25°N
24°N
18h12m
18h10m
18h08m
18h06m
18h04m
18h02m
18h00m
17h58m
17h56m
4°E
6°E
MIAMI OCEANIC CTA/FIR
HOUSTON OCEANIC CTA
FOXTROT ROUTE
MIKE ROUTE
HABANA CTA
GULF OF MEXICO
W-92
F-I
210
240
270
300
330

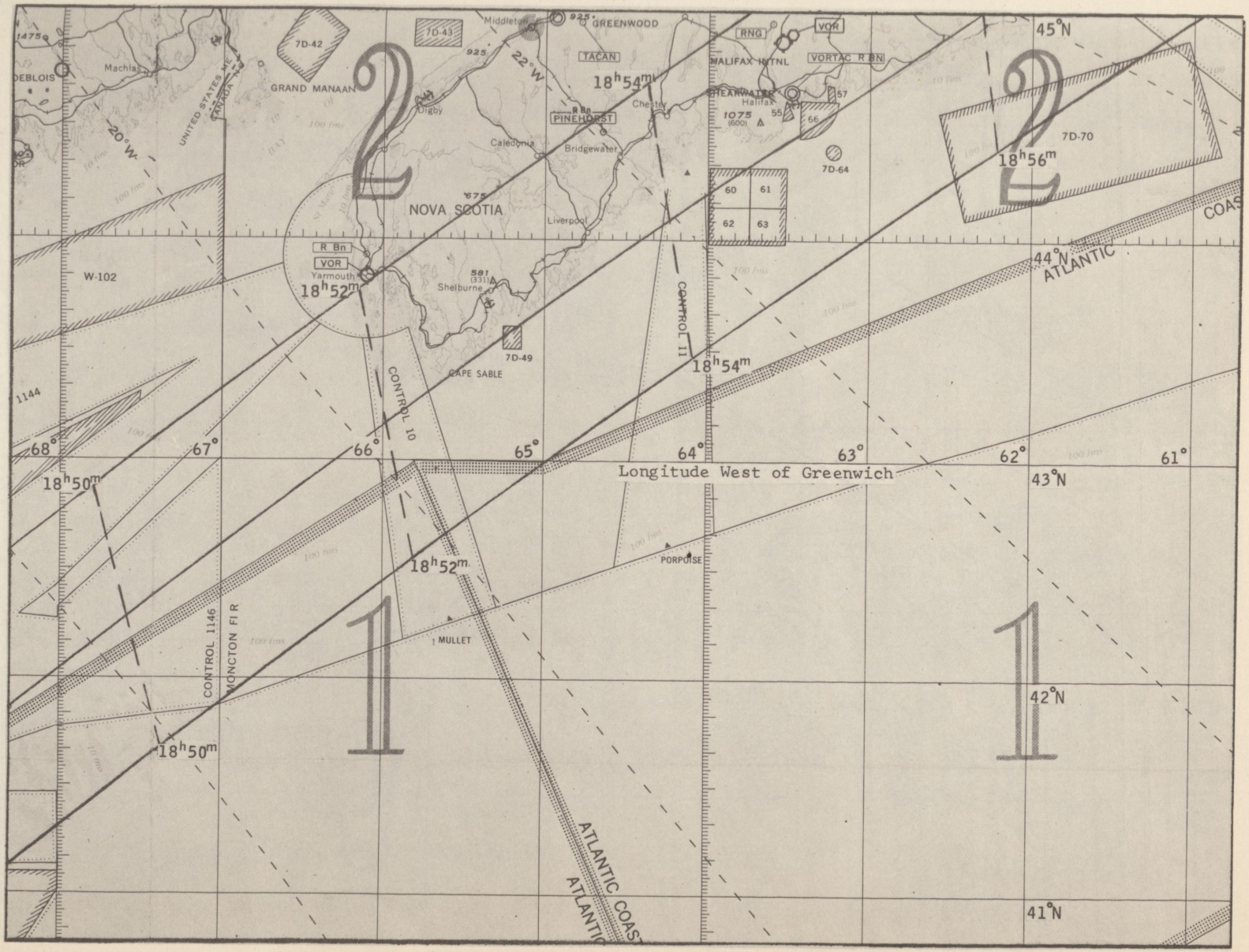

Longitude West of Greenwich
MIAMI OCEANIC CTA/FIR
CTA 1226
GULF OF MEXICO ADIZ
W-151
W-470
18h22m
18h20m
18h18m
18h16m
18h14m
18h12m
18h10m
18h24m
32°N
31°N
30°N
29°N
28°N
86°
85°
84°
83°
82°
81°
Greenville
Troy
Eufaula
Brantley
Andalusia
Enterprise
NAPIER
DOTHAN
CAIRNS AAF
Crestview
DUKE
EGLIN AFB
DESTIN
PANAMA CITY
TYNDALL AFB
CAPE SAN BLAS
APALACHICOLA
St. George Island
TALLAHASSEE
MARIANNA
Bainbridge
Thomasville
ALBANY
TURNER AFB
Fitzgerald
Cordele
Americus
Tifton
Moultrie
MOODY 1
MOODY 2
SPENCE
HOMERVILLE
MOODY AFB
VALDOSTA
Douglas
MYERS
DOUGLAS
Waycross
Taylor
Perry
FOLEY
Lake City
GAINESVILLE
KEYSTONE
KEY LARKIN
Palatka
CROSS CITY
WILLISTON
Ocala
Dunnellon
BUNNELL
DAYTONA BEACH
SMYRNA
ST. MARTINS KEYS
BROOKSVILLE
ZEPHYR HILLS
TAMPA
Clearwater
LAKELAND
ORLANDO
KISSIMMEE
Haines City
JACKSONVILLE
Jacksonville Beach
MAYPORT
St. Augustine
SAVANNAH
HUNTER AFB
LIBERTY AAF
ALMA
Jesup
Douglas
Waycross
Brunswick
Sapelo Island
St. Andrew Sound
Okefenokee Swamp
Suwannee River
Apalachee Bay
Deadman Bay
Wacasassa Bay
Withlacoochee River
Ocklawaha River
St. Johns River
Lake George
Dr. Lasbon
Alapaha River
Ochlockonee River
Flint River
Chattahoochee River
Altamaha River
Ogeechee River
Ossabaw Sound
VORTAC
VOR
TACAN
RBN
R-2914
R-2915
R-2912
R-2903
R-2906
R-2907
R-2910
R-3006
R-3008
CTA FIR


2
18h18m
18h20m
18h22m
18h24m
18h26m
18h28m
18h30m
34°N
33°N
32°N
31°N
83°
82°
81°
80°
79°
78°
Longitude West of Greenwich
ATLANTIC ADIZ
W-177
W-132
W-157
W-160
CTA 1150
CTA 1151
CTA 1153
AZALEA
GATEWAY
CAPE FEAR
NEW HANOVER
WILMINGTON
DARLINGTON
WOODWARD
Florence
COLUMBIA
SHAW AFB
Sumter
Lake City
Conway
CONWAY
Myrtle Beach
LANE
Georgetown
Orangeburg
BARNWELL
Aiken
AUGUSTA
BUSH
R-6004
Allendale
Fairfax
WALTERBORO
Summerville
CHARLESTON
JOHNS ISLAND
BEAUFORT MCAS
St. Helena Sound
Port Royal Sound
SYLVANIA
Statesboro
Swainsboro
VIDALIA
TRAVIS
SAVANNAH
HUNTER AFB
LIBERTY AAF
Ossabaw Sound
Jesup
Sapelo Island
GLYNCO NAS
Brunswick
St. Andrew Sound
JACKSONVILLE
MAYPORT
Waycross
DOUGLAS
Douglas
ALMA
Tifton
MYERS
MOODY
Moultrie
SPENCE
VALDOSTA
MOODY AFB
Okefenokee Swamp
Fitzgerald
McRae
VIENNA
DUBLIN
Dublin
HERBERT SMART
MACON
ROBINS AFB
Milledgeville
BALDWIN
McDONOUGH
Lake Sinclair
Jackson Lake
ATHENS
Gainesville
Royston
Anderson
Clinton
Greenwood
Newberry
Lake Greenwood
Lake Murray 360
Clark Hill Reservoir 340
Hartwell Reservoir 603
Wateree Pond
Lake Marion 80
Lake Moultrie 70
Lake Waccamaw
Carolina Beach

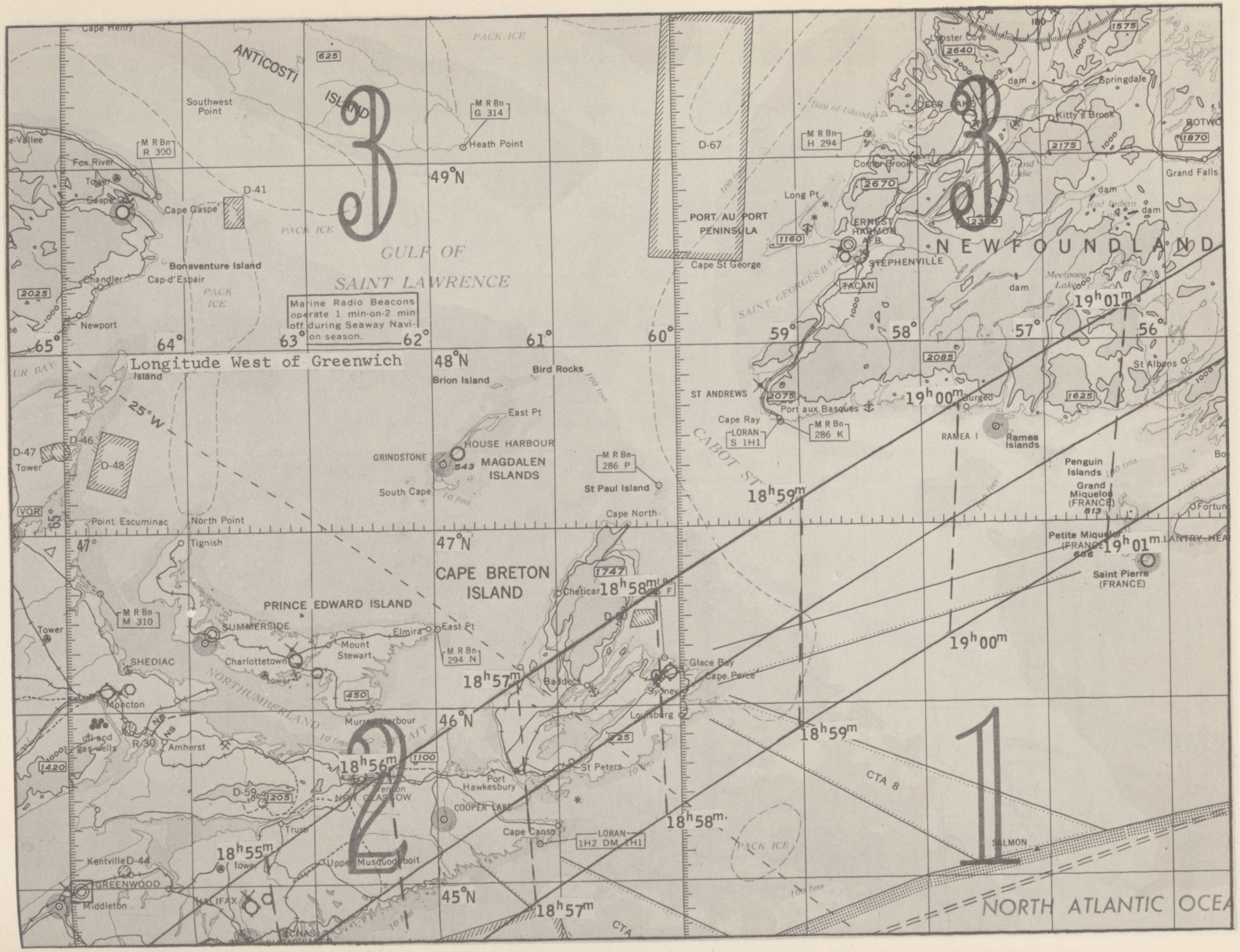

Longitude West of Greenwich
18h40m
18h42m
18h38m
18h36m
18h34m
18h32m
18h30m
79°
78°
77°
76°
75°
74°
73°
38°N
37°N
36°N
35°N
CONTROL 1148
CONTROL 1181
AIR CORRIDOR
W-108
W-386
W-72
-10°W
-8°W
WASHINGTON
ANDREWS AFB
QUANTICO MCAS
PATUXENT NAS
DAHLGREN
RICHMOND
WEST POINT
LANGLEY AFB
NEWPORT NEWS
NORFOLK
PORTSMOUTH
CHESAPEAKE
OCEANA NAS
CAPE CHARLES
ACCOMACK CO
SUSSEX CO
SNOW HILL
WATERLOO
CAPE MAY
LYNCHBURG
ROANOKE
DANVILLE
RALEIGH
DURHAM
GREENSBORO
FAYETTEVILLE
GOLDSBORO
KINSTON
WILSON
ROCKY MOUNT
PLYMOUTH
WASHINGTON
NEW BERN
MORGANTON
LUMBERTON
SANFORD
ASHEBORO
HENDERSON
ELIZABETH CITY
EDENTON
MANTEO
CAPE HATTERAS
DIAMOND SHOALS
CAPE LOOKOUT
BEAUFORT
JACKSONVILLE
CHERRY POINT MCAS
NEW RIVER MCAF
SEYMOUR JOHNSON AFB
POPE AFB
FLAT ROCK
BROOKE
RONSVILLE
CASANOVA
LINDEN
HOPEWELL
FRANKLIN
SUFFOLK
COFIELD
HALIFAX
SOUTH BOSTON
EVINGTON
BLACKSTONE AAF
LAWRENCEVILLE
MANAKIN
HARCUM
TAPPAHANNOCK
CHARLOTTESVILLE
WARRENTON
CULPEPER
FREDERICKSBURG
HARRISONBURG
MARTINSVILLE
CHASE CITY
EMPORIA
ALTAVISTA
MONTEBELLO
PINEHURST
CHERAW
DILLON
CLINTON
HAMLET
SUMTER
ANNAPOLIS
EASTON
LEWES
SALISBURY
R-6608
R-6611
R-6612
R-6613
R-6601
R-6602
R-4005
R-4006
R-4007
R-4002
R-6609
R-5604
R-5606
R-5310
R-5301
R-5314
R-5313
R-5306A
R-5311
W 50
W 72
W 386
W 108
SHAD
BASS
TASAN VOR
PAT
VOR
VORTAC
TACAN
TRUCK ROUTE



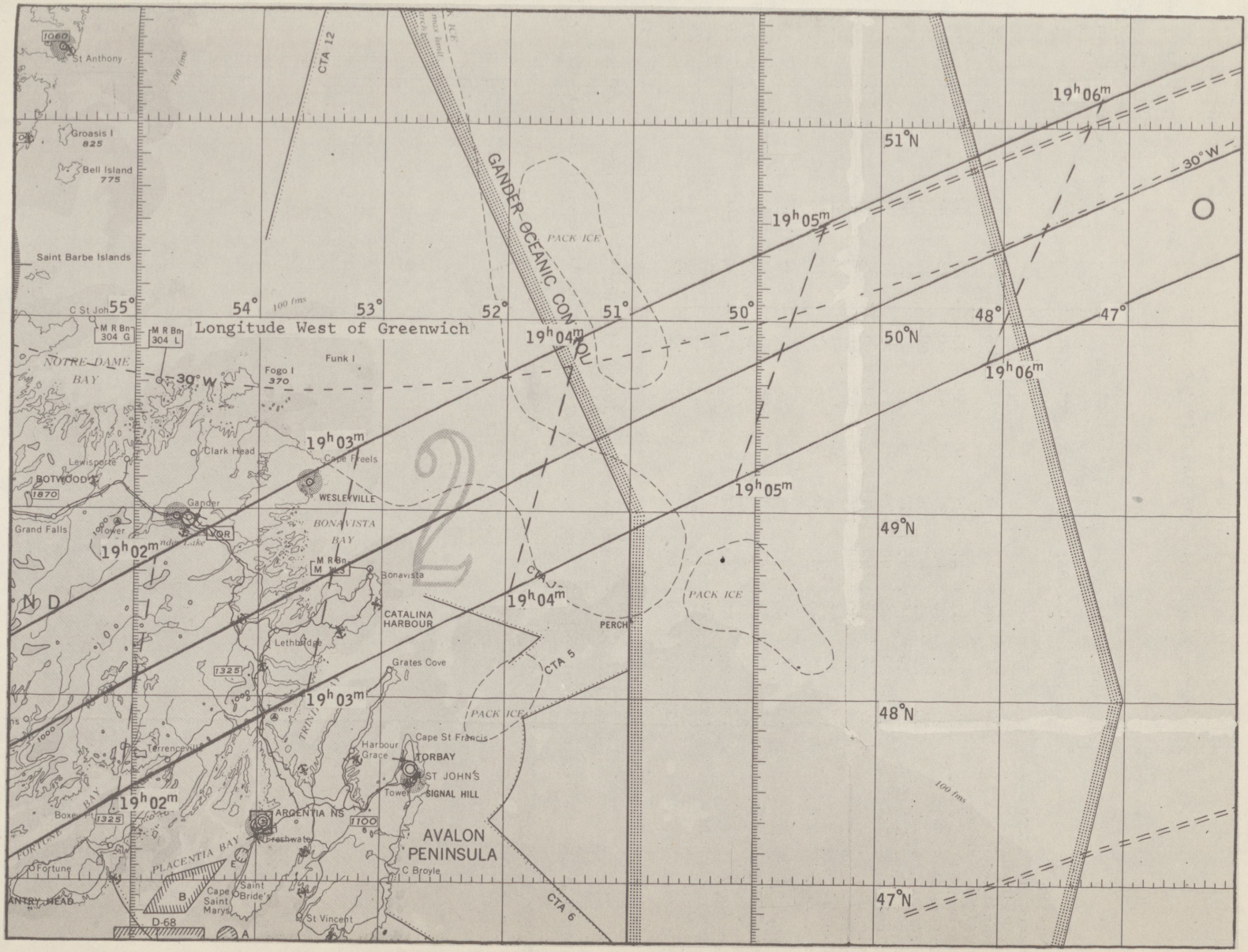
ATLANTIC ADIZ
LONG ISLAND
CONTROL 1142
CONTROL 1143
CONTROL 1144
CONTROL 1145
CONTROL 1146
CONTROL 1147
W-104
W-105
W-106
W-107
W-506
18h48m
18h46m
18h44m
18h42m
18h40m
42°N
41°N
40°N
39°N
75°
74°
73°
72°
71°
70°
69°
68°
Longitude West of Greenwich
ALPHA ROUTE
HADDOCK
TUNA
SOUTH ISLAND
MONTAUK PT
Block Island
Nantucket Island
Marthas Vineyard
Salem
Lawrence
Lowell
BOSTON
WORCESTER
HANSCOM
NORWOOD
S WEYMOUTH NAS
CAPE COD
NORTH CENTRAL
PROVIDENCE
GREEN
FALL RIVER
NEW BEDFORD
NEWPORT
TACAN VOR R Bn
CONSOLAN
HYANNIS
TACAN
CHARLESTOWN ALF
TRUMBULL
QUONSET PT NAS
WINDHAM
HARTFORD
BRADLEY
SPRINGFIELD
WESTOVER AFB
BARNES
WESTFIELD
CHESTER
TACAN
Northampton
Pittsfield
Troy
BANY
HARRIMAN
ORANGE
FITCHBURG
Gardner
VORTAC GARDNER
Manchester
New Britain
Mariana
Norwich
New London
NEW HAVEN
DANBURY
VORTAC CARMEL
VORTAC MADISON
R-5205
R-5202
VORTAC RIVERHEAD
VORTAC HAMPTON
SUFFOLK CO. AFB
McARTHUR
REPUBLIC
CGAS
VORTAC KENNEDY
VORTAC COLTS NECK
Asbury Park
LAKEHURST NAS
MONMOUTH
TRENTON
RACEWAY
New Brunswick
ALLENTOWN
VORTAC SOLBERG
VORTAC YARDLEY
VORTAC POTTSTOWN
GROVE NAS
McGUIRE AFB
Fort Dix
VORTAC COYLE
R-5002
VOR BARNEGAT
Beach Haven
Atlantic City
Ocean City
WOODSTOWN
Vineland
MILLVILLE
VORTAC SEA
VORTAC CAPE MAY
VORTAC WATERLOO
Lewes
SUSSEX CO
R-2801 DEL
Stamford
Norwalk
BRIDGEPORT
WESTCHESTER
VORTAC PATTERSON
VORTAC STILLWATER
VORTAC CALDWELL
VORTAC DEER PARK
RBN PECONIC
LA GUARDIA
NEWARK
VORTAC HUGUENOT
ORANGE CO
Middletown
Poughkeepsie
KINGSTON
DUTCHESS
WATERBURY
STEWART AFB
Peekskill
VORTAC HORNHURST
MT POCOMO
VORTAC SPARTA
VORTAC HANCOCK
DE LANCEY
Oneonta
New Berlin
ROCKDALE
Stamford
Kingston



Longitude West of Greenwich
68°
67°
66°
65°
64°
63°
62°
61°
45°N
44°N
43°N
42°N
41°N
18h50m
18h52m
18h54m
18h56m
20°W
22°W
NOVA SCOTIA
GRAND MANAAN
Digby
Caledonia
Bridgewater
Liverpool
Shelburne
Yarmouth
CAPE SABLE
PINEHORST
TACAN
GREENWOOD
Middleton
Chester
HALIFAX INTNL
VORTAC R BN
SHEARWATER
Halifax
Machias
DEBLOIS
UNITED STATES
CANADA
W-102
CONTROL 10
CONTROL 11
CONTROL 1146
MONCTON FI R
MULLET
PORPOISE
ATLANTIC COAST
7D-42
7D-43
7D-49
7D-64
7D-70
R Bn
VOR
RNG
1144
1075
(600)
581
(331)
675
925
1475



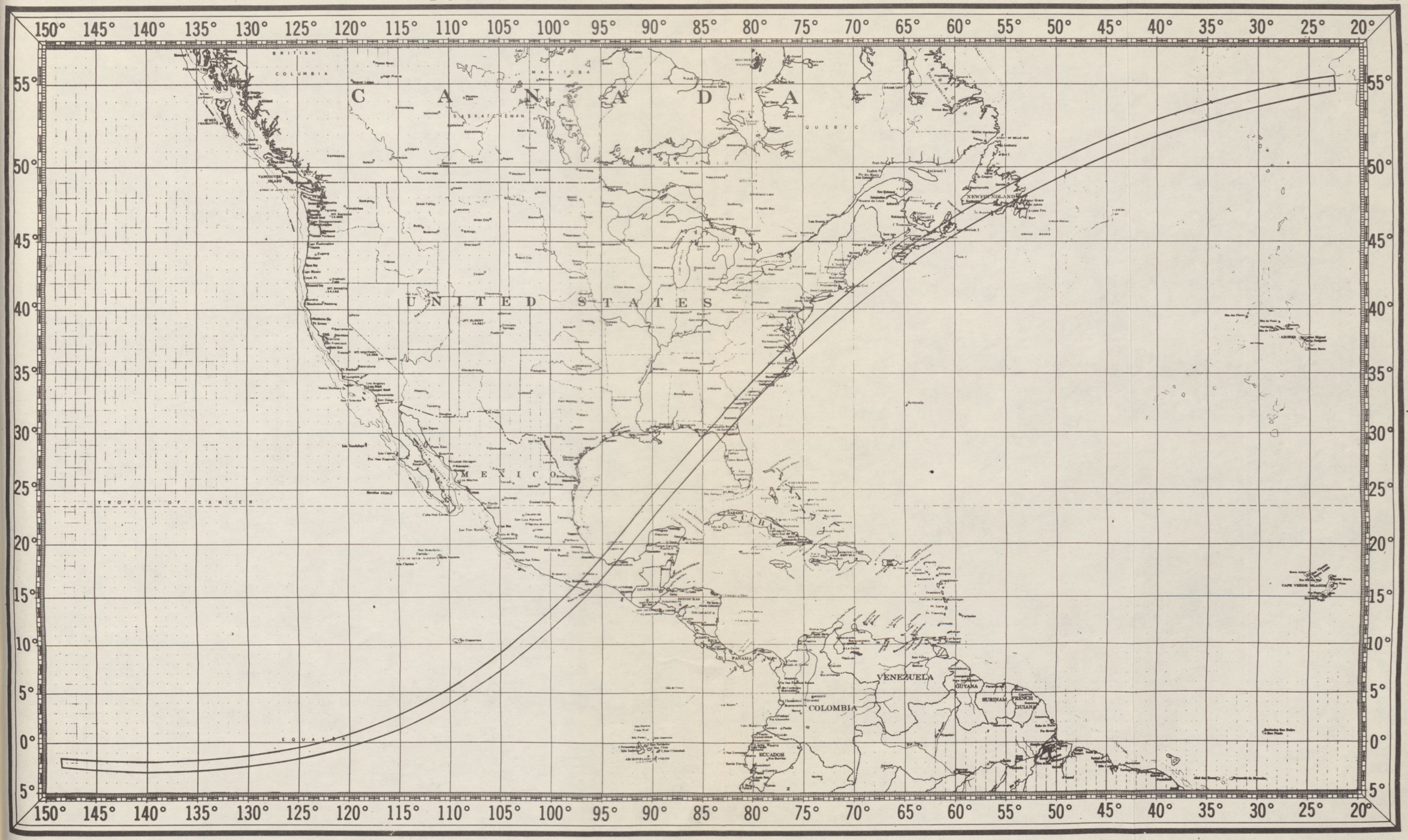
Longitude West of Greenwich
3
2
1
ANTICOSTI ISLAND
GULF OF SAINT LAWRENCE
PACK ICE
Marine Radio Beacons operate 1 min-on-2 min off during Seaway Navi-on season.
Southwest Point
Heath Point
Fox River
Cape Gaspe
Bonaventure Island
Cap-d'Espair
Chandler
Newport
Cape Henry
D-41
D-46
D-47
D-48
D-67
Point Escuminac
North Point
Tignish
Brion Island
Bird Rocks
East Pt
HOUSE HARBOUR
GRINDSTONE
MAGDALEN ISLANDS
South Cape
St Paul Island
Cape North
PORT AU PORT PENINSULA
Cape St George
Long Pt
ERNEST HARMON AFB
STEPHENVILLE
TACAN
NEWFOUNDLAND
Springdale
Kitty's Brook
Grand Falls
Corner Brook
Lobster Cove
DEER LAKE
ST ANDREWS
Port aux Basques
Cape Ray
LORAN S 1H1
M R Bn 286 K
M R Bn 286 P
M R Bn H 294
M R Bn G 314
M R Bn R 300
M R Bn M 310
M R Bn 294 N
M R Bn 286 F
Burgeo
RAMEA I
Ramea Islands
St Albans
Penguin Islands
Grand Miquelon (FRANCE)
Petite Miquelon (FRANCE)
Saint Pierre (FRANCE)
LANTRY HEA
CABOT ST
CAPE BRETON ISLAND
PRINCE EDWARD ISLAND
SUMMERSIDE
Charlottetown
Mount Stewart
Elmira
East Pt
SHEDIAC
Moncton
Amherst
NORTHUMBERLAND
Murray Harbour
Cheticar
Baddeck
Glace Bay
Cape Perce
Sydney
Louisburg
St Peters
Port Hawkesbury
COOPER LAKE
Cape Canso
LORAN 1H2 DM 1H1
Truro
Upper Musquodoboit
Kentville
GREENWOOD
Middleton
HALIFAX
SALMON
CTA 8
NORTH ATLANTIC OCEA
65°
64°
63°
62°
61°
60°
59°
58°
57°
56°
49°N
48°N
47°N
46°N
45°N
25°W
18h59m
18h58m
18h57m
18h56m
18h55m
19h00m
19h01m


Longitude West of Greenwich
55°
54°
53°
52°
51°
50°
48°
47°
30° W
51°N
50°N
49°N
48°N
47°N
19h06m
19h05m
19h04m
19h03m
19h02m
GANDER-OCEANIC CONTROL
CTA 12
CTA 5
CTA 6
PACK ICE
100 fms
St Anthony
Groasis I
Bell Island
Saint Barbe Islands
C St John
NOTRE DAME BAY
Funk I
Fogo I
Clark Head
Lewisporte
BOTWOOD
Gander
Grand Falls
WESLEYVILLE
BONAVISTA BAY
Bonavista
Cape Freels
CATALINA HARBOUR
PERCH
Lethbridge
Grates Cove
Terrenceville
Harbour Grace
CONCEPTION BAY
TORBAY
ST JOHN'S
Tower
SIGNAL HILL
Cape St Francis
ARGENTIA NS
Freshwater
AVALON PENINSULA
C Broyle
PLACENTIA BAY
Fortune
Cape Saint Mary's
Saint Bride's
St Vincent
D-68
ANTRY HEAD
VOR
M R Bn 304 G
M R Bn 304 L
M R Bn M 3

CLIMATOLOGICAL DATA

Percentages Based On Daylight Observations

	Clear		Cloudy		Precip. .01 in.		Mean Cloud Cover		On 7 March The Probability Of A Clear Day	A Cloudy Day	Precip. .01 in.	Seeing Sun at Any Time
	Feb.	Mar.	Feb.	Mar.	Feb.	Mar.	Feb.	Mar.				
Mexico							23	29				76
Oaxaca de Juarez							20	19				80
Salina Cruz												
Minatitlán	24	31	61	50	18	13	70	61	26	58	17	32
United States												
Jacksonville, Fla.	29	29	42	42	29	26	59	59	29	42	28	41
Tallahassee, Fla.	21	29	50	42	39	29	64	60	23	48	37	37
Savannah, Ga.	29	29	46	42	36	29	61	60	29	45	34	39
Charleston, S.C.	29	29	46	45	32	35	61	61	29	46	33	39
Columbia. S.C.	32	29	46	45	39	35	59	58	31	46	38	41
Raleigh, N.C.	32	32	46	45	36	32	60	59	32	46	35	40
Norfolk, Va.	29	29	50	48	36	35	63	60	29	50	36	38
Newark. N.J.	25	26	46	45	36	39	63	61	25	46	37	37
Providence, R.I.	29	32	46	42	39	35	67	66	30	45	38	33
Canada												
Yarmouth, N.S.	20	27	69	61	54	48	74	67	22	67	53	28
Shearwater, N.S.	26	28	58	58			65	64	26	58		35
Greenwood, N.S.	20	31	67	57			73	71	23	65		27
Sydney, N.S.	19	24	64	63	50	48	72	69	20	64	50	29
Gander Airport, Nfd.	19	20	70	69			75	73	19	70		25
Argentia, Nfd.	14	15	68	69	57	48	76	77	14	68	55	24
St. Andrew's, Nfd.	11	20	78	66			81	72	13	75		21

The low percentage of cloudiness at Oaxaca de Juarez is due to its high elevation of 5128 feet. The low value at Salina Cruz is probably due to the difference in climate between the northern and southern coasts of this area of Mexico.

TOTAL SOLAR ECLIPSE OF 7 MARCH 1970